

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113  
Combination No. : 0402746961  
Injection pump  
Pump designation : PES6P120A720RS7292  
EP type number : 0412726897  
Governor  
Governor design. : RQV350...1150PA1104  
                  : -2K  
Governor no. : 0421815372  
Cust. part No. : 0250741202

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Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power Kw : 142.0

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## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1417413047  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Tolerance l/h : ± 10.0  
Test nozzle holde  
assembly : 1688901105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Lube oil : 1409918004

Test Lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

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## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

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## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
                  : 4  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

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## BEGINNING OF DELIVERY DIFFERENCE

°NW after s.o.d. : 3.0  
S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 3.0

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## BASIC SETTING

Rated speed rpm : 1150

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Rack travel in mm : 14.50  
Tolerance mm : + 0.05

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Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0

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Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

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Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

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Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

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Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 7.30  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

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GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.84  
Tolerance mm : + 0.25

Rated speed rpm : 1208  
guide sleeve  
travel mm : 9.41  
Tolerance mm : + 0.25

Rated speed rpm : 836  
guide sleeve  
travel mm : 5.58  
Tolerance mm : + 0.25

Rated speed rpm : 367

A02

guide sleeve  
travel mm : 1.96  
Tolerance mm : + 0.25

Rated speed rpm : 417  
guide sleeve  
travel mm : 2.46  
Tolerance mm : + 0.25

Rated speed rpm : 510  
guide sleeve  
travel mm : 3.11  
Tolerance mm : + 0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

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GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1315

Rack travel in mm : 13.50  
Tolerance mm : + 2.50

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FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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RATED SPEED

control lever  
position degree : 108.0  
tolerance degree : + 4.0

rack travel mm : 13.50  
Rated speed rpm : 1195  
Tolerance 1/min : + 5



rack travel mm : 4.00  
Rated speed rpm : 1320  
Tolerance 1/min : ± 15

rack travel mm : 0.70  
Tolerance mm : ± 0.70  
Rated speed rpm : 1400

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LOW IDLE

control lever  
position degree : 62.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

Rated speed rpm : 400

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TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.50  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 14.45  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
rack travel mm : 13.70  
Tolerance mm : ± 0.10

Rated speed rpm : 600  
rack travel mm : 13.65  
Tolerance mm : ± 0.10

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ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.50  
Tolerance mm : ± 0.05

MEASUREMENT

A03

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 11.30  
Tolerance mm : ± 0.15

Rated speed rpm : 1150

Pressure hPa : 870  
rack travel mm : 13.70  
Tolerance mm : ± 0.05

Pressure hPa : 380  
rack travel mm : 12.00  
Tolerance mm : ± 0.20

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START CUT-OUT

Rated speed rpm : < 270  
Check  
speed 1/min : < 290

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FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 276.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 286.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

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BREAKAWAY

Rack travel in mm : 13.50  
Rated speed rpm : 1195  
Tolerance 1/min : ± 5

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STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 14.50  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

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LOW IDLE

Rated speed rpm : 350  
rack travel mm : 7.30  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113

Combination No. : 0402746962

Injection pump  
Pump designation : PES6P120A72ORS7292  
EP type number : 0412726897

Governor  
Governor design. : RQV350...1150PA1104  
: -3K  
Governor no. : 0421815373

Cust. part No. : 0250741102

Customer-spec. information

Customer : MB-NFZ  
Motor : OM366LA  
Power Kw : 127.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 100  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

°NW after s.o.d. : 3.0  
S.o.d. blocking  
Barrel no. : 1

°NW after s.o.d. : 3.0

BASIC SETTING

Rated speed rpm : 1150

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Rack travel in mm : 13.50  
Tolerance mm :  $\pm$  0.05

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Del. quantity  
cm<sup>3</sup>/1000 strokes : 272.0

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Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

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Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

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Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

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Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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2nd speed rpm : 350

Rack travel in mm : 7.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.84  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1208  
guide sleeve  
travel mm : 9.41  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 836  
guide sleeve  
travel mm : 5.58  
Tolerance mm :  $\pm$  0.25

A06

Rated speed rpm : 367  
guide sleeve  
travel mm : 1.96  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 417  
guide sleeve  
travel mm : 2.46  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 510  
guide sleeve  
travel mm : 3.11  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1310

Rack travel in mm : 12.50  
Tolerance mm :  $\pm$  2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 272.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
position degree : 109.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.50  
Rated speed rpm : 1195

Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1310  
 Tolerance 1/min : + 15  
 rack travel mm : 0.70  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1400

LOW IDLE

control lever  
 position degree : 62.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
 rack travel mm : 5.00  
 Tolerance mm : + 0.10  
 Rated speed rpm : 250  
 CRT mm min. : > 6.50  
 Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1150  
 rack travel mm : 13.50  
 Tolerance mm : + 0.05  
 Rated speed rpm : 950  
 rack travel mm : 13.45  
 Tolerance mm : + 0.10  
 Rated speed rpm : 750  
 rack travel mm : 12.80  
 Tolerance mm : + 0.10  
 Rated speed rpm : 600  
 rack travel mm : 12.70  
 Tolerance mm : + 0.10

ANEROID/ALTITUDE  
 COMPENSATOR TEST

SETTING

Rated speed rpm : 1150  
 Pressure hPa : 1500  
 rack travel mm : 13.50  
 Tolerance mm : + 0.05

A07

MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 1150  
 rack travel mm : 10.80  
 Tolerance mm : + 0.15  
 Rated speed rpm : 1150  
 Pressure hPa : 650  
 rack travel mm : 12.90  
 Tolerance mm : + 0.05  
 Pressure hPa : 250  
 rack travel mm : 11.40  
 Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : < 270  
 Check  
 speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1500  
 Rated speed rpm : 750  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 269.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0  
 Aneroid pressure  
 hPa : 1500  
 Rated speed rpm : 600  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 274.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 184.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

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#### BREAKAWAY

Rack travel in mm : 12.50  
Rated speed rpm : 1195  
Tolerance 1/min : ± 5

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#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.50  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

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#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 7.30  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.10.94  
Test oil : ISO 4113  
Combination No. : 0402846061  
Injection pump  
Pump designation : PE6P120A320RS8024-1  
EP type number : 0412826029  
Governor  
Governor design. : RQV250...1100PA1072  
                  : -3K  
Governor no. : 0421815979  
Cust. part No. : 477950-P03

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : TD74 EU  
Power KW : 169.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 2417413089  
Inlet press. bar : 2.5  
Tolerance bar : + 0.1  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1680750008  
Outside diameter : 6.0

A09

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 3.60  
Tolerance mm : + 0.05  
Rack travel in mm : 7.20  
Tolerance mm : + 0.50  
Firing order : 1- 5- 3- 6- 2-  
                  : 4  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : + 0.30  
Check  
tolerance °Nw : + 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 11.40  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.33  
Tolerance mm : + 0.25

Rated speed rpm : 1176  
guide sleeve  
travel mm : 10.15  
Tolerance mm : + 0.25

Rated speed rpm : 733  
guide sleeve  
travel mm : 5.39  
Tolerance mm : + 0.25

Rated speed rpm : 307  
guide sleeve  
travel mm : 2.29  
Tolerance mm : + 0.25

Rated speed rpm : 357  
guide sleeve  
travel mm : 2.97  
Tolerance mm : + 0.25

Rated speed rpm : 390  
guide sleeve  
travel mm : 3.22  
Tolerance mm : + 0.25

Rated speed rpm : 1390  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1290

Rack travel in mm : 7.50  
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

RATED SPEED

control lever  
position degree : 118.0  
tolerance degree : + 4.0

rack travel mm : 10.40  
Rated speed rpm : 1165  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1240  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1320

LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 4.40  
Tolerance mm : + 0.30

Rated speed rpm : 200

CRT mm min. : > 6.50



Rated speed rpm : 375

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TORQUE CONTROL

Rated speed rpm : 650  
rack travel mm : 9.10  
Tolerance mm : ± 0.10

Rated speed rpm : 300  
rack travel mm : 8.30  
Tolerance mm : ± 0.30

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ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100  
Pressure hPa : 1500  
rack travel mm : 11.40  
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1100  
rack travel mm : 7.20  
Tolerance mm : ± 0.10

Rated speed rpm : 1100

Pressure hPa : 580  
rack travel mm : 3.50  
Tolerance mm : ± 0.20

Pressure hPa : 120  
rack travel mm : 0.25  
Tolerance mm : ± 0.05

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FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 114.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

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BREAKAWAY

Rack travel in mm : 10.40  
Rated speed rpm : 1165  
Tolerance 1/min : ± 5

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.10.94  
Test oil : ISO 4113  
Combination No. : 0402846065  
Injection pump  
Pump designation : PE6P110A320RS8009-1  
EP type number : 0412816011  
Governor  
Governor design. : RGV300...1050PA1183  
Governor no. : 0421814111  
Cust. part No. : 11030876  
: -P03 V.9.94

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Customer-spec. information  
Customer : VME  
Motor : TD 73 KDE  
Power kW : 149.0

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## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2417413078  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1680750008  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

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## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

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## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.85  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.00  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

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## BASIC SETTING

Rated speed rpm : 700  
Rack travel in mm : 10.90  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

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Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.19  
Tolerance mm : ± 0.25

Rated speed rpm : 1107  
guide sleeve  
travel mm : 7.85  
Tolerance mm : ± 0.25

Rated speed rpm : 804  
guide sleeve  
travel mm : 5.19  
Tolerance mm : ± 0.25

Rated speed rpm : 385  
guide sleeve  
travel mm : 1.98  
Tolerance mm : ± 0.25

Rated speed rpm : 435  
guide sleeve  
travel mm : 2.45  
Tolerance mm : ± 0.25

Rated speed rpm : 530  
guide sleeve  
travel mm : 3.11  
Tolerance mm : ± 0.25

Rated speed rpm : 1400  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1200

Rack travel in mm : 11.00  
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
position degree : 44.0  
tolerance degree : ± 4.0

control lever  
position degree : 111.0  
tolerance degree : ± 4.0

rack travel mm : 9.90  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1170  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1300

LOW IDLE

control lever  
position degree : 81.0  
tolerance degree : ± 4.0

control lever  
position degree : 17.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm : ± 0.30

Rated speed rpm : 200  
CRT mm min. : > 7.60  
Rated speed rpm : 370

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 10.90  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.00  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 500

Pressure hPa : 650  
rack travel mm : 2.40  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 280  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 117.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 9.90  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.10.94  
Test oil : ISO 4113

Combination No. : 0402944300

Injection pump  
Pump designation : PES4P120A72ORS8506  
EP type number : 0412924201

Governor  
Governor design. : RQV350...1150PA1117K  
Governor no. : 0421815380

Cust. part No. : 0250741902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM364LA  
Power KW : 104.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2417413082

Inlet press. bar : 2.5  
Tolerance bar : + 0.1

Overflow quantity  
min. L/h : 85  
Tolerance L/h : + 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

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Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.50  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 1-3- 4- 2

Phasing : 0-90-180-270  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

°NW after s.o.d. : 2.1

S.o.d. blocking  
Barrel no. : 1

°NW after s.o.d. : 2.1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.80  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 242.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

---

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 14.0

---

2nd speed rpm : 350

Rack travel in mm : 7.20  
 Tolerance mm : + 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 15.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 14.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.63  
 Tolerance mm : + 0.15

Rated speed rpm : 1208  
 guide sleeve  
 travel mm : 9.38  
 Tolerance mm : + 0.20

Rated speed rpm : 837  
 guide sleeve  
 travel mm : 5.57  
 Tolerance mm : + 0.25

Rated speed rpm : 368

guide sleeve  
 travel mm : 1.85  
 Tolerance mm : + 0.25

Rated speed rpm : 418  
 guide sleeve  
 travel mm : 2.37  
 Tolerance mm : + 0.25

Rated speed rpm : 520  
 guide sleeve  
 travel mm : 3.18  
 Tolerance mm : + 0.25

Rated speed rpm : 1490  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1300

Rack travel in mm : 12.50  
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : 1600  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 242.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 14.0

RATED SPEED

control lever  
 position degree : 109.0  
 tolerance degree : + 4.0

rack travel mm : 11.80  
 Rated speed rpm : 1195  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1295  
Tolerance 1/min : + 15

rack travel mm : 0.70  
Tolerance mm : + 0.70  
Rated speed rpm : 1400

---

#### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 7.85

Rated speed rpm : 425

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 12.80  
Tolerance mm : + 0.05

Rated speed rpm : 1000  
rack travel mm : 12.80  
Tolerance mm : + 0.05

Rated speed rpm : 925  
rack travel mm : 12.80  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 12.30  
Tolerance mm : + 0.10

Rated speed rpm : 600  
rack travel mm : 11.50  
Tolerance mm : + 0.10

Rated speed rpm : 500  
rack travel mm : 11.00  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1600  
rack travel mm : 12.80  
Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 9.60  
Tolerance mm : + 0.15

Rated speed rpm : 1150

Pressure hPa : 750  
rack travel mm : 12.10  
Tolerance mm : + 0.05

Pressure hPa : 400  
rack travel mm : 10.80  
Tolerance mm : + 0.10

---

#### START CUT-OUT

Rated speed rpm : < 270  
Check  
speed 1/min : < 290

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 246.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 9.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 218.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

BREAKAWAY

Rack travel in mm : 11.80  
Rated speed rpm : 1195  
Tolerance 1/min : ± 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.80  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 7.20  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 07.10.94
Test oil : ISO 4113
Combination No. : 0402946301
Injection pump
Pump designation : PES6P120A720LS8503
EP type number : 0412926203
Governor
Governor design. : RQV300...950PA1084K
Governor no. : 0421815985
Cust. part No. : 0240749202

Customer-spec. information
Customer : MB-NFZ
Motor : OM447 LA
Power KW : 260.0

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 70
Tolerance l/h : ± 10.0

Test nozzle holder assembly : 1688901105

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

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Test Lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.85
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm :	4.00
Tolerance mm :	+ 0.20
<hr/>	
Del. quantity cm <sup>3</sup> /1000 strokes :	40.0
<hr/>	
Tolerance cm <sup>3</sup> /1000 strokes :	+ 3.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S. :	+ 6.0
<hr/>	
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes :	6.0
Check tolerance cm <sup>3</sup> /1000S. :	9.0
Rated speed rpm :	950
<hr/>	
Rack travel in mm :	13.50
Tolerance mm :	+ 0.05
<hr/>	
Del. quantity cm <sup>3</sup> /1000 strokes :	389.0
<hr/>	
Tolerance cm <sup>3</sup> /1000 strokes :	+ 1.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S. :	+ 6.0
<hr/>	
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes :	10.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S. :	14.0
2nd speed rpm :	300
<hr/>	
Rack travel in mm :	5.20
Tolerance mm :	+ 0.30
Del. quantity cm <sup>3</sup> /1000 strokes :	19.0
Tolerance cm <sup>3</sup> /1000 strokes :	+ 3.0
Check tolerance cm <sup>3</sup> /1000S. :	+ 6.0
Spreed	
Tolerance cm <sup>3</sup> /1000 strokes :	8.0
Check tolerance cm <sup>3</sup> /1000S. :	14.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	300
guide sleeve travel mm :	1.69
Tolerance mm :	+ 0.20
<hr/>	
Rated speed rpm :	1006
guide sleeve travel mm :	7.42
Tolerance mm :	+ 0.15
<hr/>	
Rated speed rpm :	790
guide sleeve travel mm :	4.79
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	345
guide sleeve travel mm :	2.33
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	395
guide sleeve travel mm :	2.79
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	500
guide sleeve travel mm :	3.17
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	1169
guide sleeve travel mm :	12.00
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	1250
guide sleeve travel mm :	13.50
Tolerance mm :	+ 0.50

GUIDE SLEEVE POSITION

control lever position degree :	- 1
Rated speed rpm :	1160
<hr/>	
Rack travel in mm :	12.50
Tolerance mm :	+ 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 389.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 10.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 14.0

---

#### RATED SPEED

control lever  
 position degree : 110.0  
 tolerance degree : ± 4.0

rack travel mm : 12.50  
 Rated speed rpm : 995  
 Tolerance 1/min : ± 5

rack travel mm : 4.00  
 Rated speed rpm : 1075  
 Tolerance 1/min : ± 15

rack travel mm : 0.75  
 Tolerance mm : ± 0.75  
 Rated speed rpm : 1250

---

#### LOW IDLE

control lever  
 position degree : 72.0  
 tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 300  
 rack travel mm : 5.00  
 Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 6.50

Rated speed rpm : 370

---

#### TORQUE CONTROL

Rated speed rpm : 950  
 rack travel mm : 13.50

Tolerance mm : ± 0.05

Rated speed rpm : 850  
 rack travel mm : 12.70  
 Tolerance mm : ± 0.10

Rated speed rpm : 550  
 rack travel mm : 11.00  
 Tolerance mm : ± 0.20

Rated speed rpm : 400  
 rack travel mm : 10.40  
 Tolerance mm : ± 0.20

Rated speed rpm : 850  
 rack travel mm : 10.75  
 Tolerance mm : ± 0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 950  
 Pressure hPa : 1200  
 rack travel mm : 13.50  
 Tolerance mm : ± 0.05

#### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 850  
 rack travel mm : 8.25  
 Tolerance mm : ± 0.15

Pressure hPa : -  
 Rated speed rpm : 350  
 rack travel mm : 7.40  
 Tolerance mm : ± 0.20

Rated speed rpm : 950

Pressure hPa : 350  
 rack travel mm : 9.35  
 Tolerance mm : ± 0.15

Pressure hPa : 600  
 rack travel mm : 10.75  
 Tolerance mm : ± 0.15

---

#### START CUT-OUT

Rated speed rpm : < 220  
 Check  
 speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 374.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 7.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 360.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

Aneroid pressure  
hPa : 600  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 304.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 207.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

BREAKAWAY

Rack travel in mm : 12.50  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.50  
Tolerance mm : ± 0.40

Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.10.94  
Test oil : ISO 4113  
Combination No. : 0403244034  
Injection pump  
Pump designation : PES4MM100/720RS1519  
: -3  
EP type number : 0413204018  
Governor  
Governor design. : RQV300...1300MW132  
: -3  
Governor no. : 0420083296  
Cust. part No. : 0240740702

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM364LA  
Power KW : 77.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test Lines : 1680750089  
Outside diameter : 8.0

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x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 4.55  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 21.00  
Firing order : 1-3-4-2  
Phasing : 0-90-180-270  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 11.50  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 0.91  
Tolerance mm : ± 0.25

Rated speed rpm : 1345  
guide sleeve  
travel mm : 7.64  
Tolerance mm : ± 0.25

Rated speed rpm : 1140  
guide sleeve  
travel mm : 5.88  
Tolerance mm : ± 0.25

Rated speed rpm : 629  
guide sleeve  
travel mm : 3.15  
Tolerance mm : ± 0.25

Rated speed rpm : 679  
guide sleeve  
travel mm : 3.53  
Tolerance mm : ± 0.25

Rated speed rpm : 800  
guide sleeve  
travel mm : 4.00  
Tolerance mm : ± 0.25

Rated speed rpm : 1596  
guide sleeve  
travel mm : 12.00  
Tolerance mm : ± 0.25

Rated speed rpm : 1690  
guide sleeve  
travel mm : 13.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1400

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

RATED SPEED

control lever  
position degree : 112.0  
tolerance degree : ± 4.0

rack travel mm : 10.50  
Rated speed rpm : 1345  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1435  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1550

LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 4.00  
Tolerance mm : ± 0.10

Rated speed rpm : 200  
CRT mm min. : > 4.50

---

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 11.50  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 11.50  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 11.50  
Tolerance mm : ± 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.70  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
Pressure hPa : 290  
rack travel mm : 11.25  
Tolerance mm : ± 0.10

Pressure hPa : 250  
rack travel mm : 11.00  
Tolerance mm : ± 0.10

---

#### START CUT-OUT

Rated speed rpm : < 200  
Check speed 1/min : < 220

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 700  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 86.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance cm<sup>3</sup>/1000S. : ± 4.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 66.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 3.0

---

#### BREAKAWAY

Rack travel in mm : 10.50  
Rated speed rpm : 1345  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 8.0

---

#### LOW IDLE

Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 4.5  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance : 5.5  
cm<sup>3</sup>/1000s.





# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.10.94  
Test oil : ISO 4113  
Combination No. : 0403244035  
Injection pump  
Pump designation : PES4MW100/72ORS1519  
                  : -3  
EP type number : 0413204018  
Governor  
Governor design. : RQV300...1300MW132  
                  : -3  
Governor no. : 0420083296  
Cust. part No. : 0240740802

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM364LA  
Power KW : 77.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1680750089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 21.00  
Firing order : 1- 3- 4- 2  
Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 11.50  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 0.91  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 1345  
 guide sleeve  
 travel mm : 7.64  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 1140  
 guide sleeve  
 travel mm : 5.88  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 629  
 guide sleeve  
 travel mm : 3.15  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 679  
 guide sleeve  
 travel mm : 3.53  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 800  
 guide sleeve  
 travel mm : 4.00  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 1596  
 guide sleeve  
 travel mm : 12.00  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 1690  
 guide sleeve  
 travel mm : 13.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1400  
 Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 95.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

RATED SPEED

control lever  
 position degree : 112.0  
 tolerance degree : ± 4.0  
 rack travel mm : 10.50  
 Rated speed rpm : 1345  
 Tolerance 1/min : ± 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1435  
 Tolerance 1/min : ± 15  
 rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1550

LOW IDLE

control lever  
 position degree : 70.0  
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 4.00  
Tolerance mm : ± 0.10

Rated speed rpm : 200  
CRT mm min. : > 4.50

---

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 11.50  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 11.50  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 11.50  
Tolerance mm : ± 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.70  
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 290  
rack travel mm : 11.25  
Tolerance mm : ± 0.10

Pressure hPa : 250  
rack travel mm : 11.00  
Tolerance mm : ± 0.10

---

#### START CUT-OUT

Rated speed rpm : < 200  
Check  
speed 1/min : < 220

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 66.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

#### BREAKAWAY

Rack travel in mm : 10.50  
Rated speed rpm : 1345  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance : 5.5  
cm<sup>3</sup>/1000S.



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.10.94  
Test oil : ISO 4113  
Combination No. : 0403244043  
Injection pump  
Pump designation : PES4MW100/720RS1519  
: -2  
EP type number : 0413204017  
Governor  
Governor design. : RQV300...1300MW132  
: -6  
Governor no. : 0420083309  
Cust. part No. : 0240744102

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM364LA  
Power kW : 103.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1680750089  
Outside diameter : 8.0

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x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 21.00  
Firing order : 1- 3- 4- 2  
Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 13.90  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5  
  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 0.91  
 Tolerance mm : ± 0.25

Rated speed rpm : 1354  
 guide sleeve  
 travel mm : 7.77  
 Tolerance mm : ± 0.25

Rated speed rpm : 1140  
 guide sleeve  
 travel mm : 5.88  
 Tolerance mm : ± 0.25

Rated speed rpm : 629  
 guide sleeve  
 travel mm : 3.15  
 Tolerance mm : ± 0.25

Rated speed rpm : 679  
 guide sleeve  
 travel mm : 3.53  
 Tolerance mm : ± 0.25

Rated speed rpm : 800  
 guide sleeve  
 travel mm : 4.00  
 Tolerance mm : ± 0.25

Rated speed rpm : 1596  
 guide sleeve  
 travel mm : 12.00  
 Tolerance mm : ± 0.25

Rated speed rpm : 1690  
 guide sleeve  
 travel mm : 13.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1510

Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 126.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

RATED SPEED

control lever  
 position degree : 116.0  
 tolerance degree : ± 4.0

rack travel mm : 12.90  
 Rated speed rpm : 1345  
 Tolerance 1/min : ± 5

rack travel mm : 4.00  
 Rated speed rpm : 1465  
 Tolerance 1/min : ± 15

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1550

LOW IDLE

control lever  
 position degree : 71.0  
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 3.90  
Tolerance mm : ± 0.10

Rated speed rpm : 200  
CRT mm min. : > 4.50

---

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 13.90  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 13.90  
Tolerance mm : ± 0.10

Rated speed rpm : 600  
rack travel mm : 13.90  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.90  
Tolerance mm : ± 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.10  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
Pressure hPa : 600  
rack travel mm : 13.10  
Tolerance mm : ± 0.10

Pressure hPa : 350  
rack travel mm : 11.60  
Tolerance mm : ± 0.10

---

#### START CUT-OUT

Rated speed rpm : < 200  
Check speed 1/min : < 220

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 124.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 67.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

#### BREAKAWAY

Rack travel in mm : 12.90  
Rated speed rpm : 1345  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5





BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.10.94  
Test oil : ISO 4113

Combination No. : 0403446287

Injection pump  
Pump designation : PES6MW100/32ORS1219  
EP type number : 0413406209

Governor  
Governor design. : RQV350...1100MW118  
Governor no. : 0420083249

Cust. part No. :

Customer spec. information  
Customer : VME  
Motor : TD 61 GB  
Power KW : 115.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1457413010

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 0681343009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

B07

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.70  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 113.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0  
  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1200  
  
 Rack travel in mm : 10.70  
 Tolerance mm : +- 0.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 113.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

RATED SPEED

control lever  
 position degree : 109.0  
 tolerance degree : +- 4.0  
  
 rack travel mm : 10.70  
 Rated speed rpm : 1145

B08

Tolerance 1/min : +- 5  
  
 rack travel mm : 4.00  
 Rated speed rpm : 1215  
 Tolerance 1/min : +- 15  
  
 rack travel mm : 0.55  
 Tolerance mm : +- 0.45  
 Rated speed rpm : 1300

---

LOW IDLE

control lever  
 position degree : 75.0  
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 350  
 rack travel mm : 5.70  
 Tolerance mm : +- 0.10  
  
 rack travel mm : 2.00  
 Rated speed rpm : 490  
 Tolerance 1/min : +- 30  
  
 Rated speed rpm : 200  
  
 CRT mm min. : > 8.00

---

TORQUE CONTROL

Rated speed rpm : 1100  
 rack travel mm : 11.70  
 Tolerance mm : +- 0.05  
  
 Rated speed rpm : 700  
 rack travel mm : 12.60  
 Tolerance mm : +- 0.10  
  
 Rated speed rpm : 1010  
 rack travel mm : 12.00  
 Tolerance mm : +- 0.15  
  
 Rated speed rpm : 970  
 rack travel mm : 12.30  
 Tolerance mm : +- 0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 700  
 Pressure hPa : 1000

rack travel mm : 12.60  
Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 700  
rack travel mm : 10.00  
Tolerance mm : + 0.05

Rated speed rpm : 700

Pressure hPa : 780  
rack travel mm : 12.25  
Tolerance mm : + 0.15

Pressure hPa : 250  
rack travel mm : 10.25  
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : < 270  
Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000  
Rated speed rpm : 700  
Del. quantity cm<sup>3</sup>/1000 strokes : 124.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure hPa : -  
Rated speed rpm : 700  
Del. quantity cm<sup>3</sup>/1000 strokes : 78.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 3.0

BREAKAWAY

Rack travel in mm : 10.70

B09

Rated speed rpm : 1145  
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00  
Del. quantity cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 17.0  
Check tolerance cm<sup>3</sup>/1000S. : + 20.0

LOW IDLE

Del. quantity cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.5  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance cm<sup>3</sup>/1000S. : 5.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.10.94  
Test oil : ISO 4113  
Combination No. : 0401646002  
Injection pump  
Pump designation : PES6R120/720LS1505  
EP type number : 0411626004

Governor  
Governor design. : RQV300...1100R3K  
Governor no. : 0421415004

Cust. part No. : 51.11103-7234

## Customer-spec. information

Customer : MAN  
Motor : D2866LE401  
Power KW : 440.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.00  
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 15.30  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 385.0

<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.0
<hr/>	
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 5.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 325
<hr/>	
Rack travel in mm	: 5.30
Tolerance mm	: + 0.20
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 20.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 3.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 6.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 325
guide sleeve	
travel mm	: 2.12
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1164
guide sleeve	
travel mm	: 10.04
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 826
guide sleeve	
travel mm	: 6.86
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 338
guide sleeve	
travel mm	: 2.28
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 388
guide sleeve	
travel mm	: 2.90

Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 510
guide sleeve	
travel mm	: 4.02
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1430
guide sleeve	
travel mm	: 13.50
Tolerance mm	: + 0.50

---

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1240
<hr/>	
Rack travel in mm	: 14.30
Tolerance mm	: + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
Aneroid pressure	
hPa	: 2500
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 385.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0

---

RATED SPEED

control lever	
position degree	: 122.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: 14.30
Rated speed rpm	: 1152
Tolerance 1/min	: + 8
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1295
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1425

---

LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 325  
rack travel mm : 5.30  
Tolerance mm : ± 0.10

Rated speed rpm : 225

CRT mm min. : > 7.00

Rated speed rpm : 350

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 15.30  
Tolerance mm : ± 0.05

Rated speed rpm : 900  
rack travel mm : 13.90  
Tolerance mm : ± 0.10

Rated speed rpm : 700  
rack travel mm : 12.60  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100  
Pressure hPa : 2500  
rack travel mm : 15.30  
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : 300  
Rated speed rpm : 1100  
rack travel mm : 8.60  
Tolerance mm : ± 0.05

Rated speed rpm : 1100

Pressure hPa : 1400  
rack travel mm : 13.60  
Tolerance mm : ± 0.15

---

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---

START CUT-OUT

Rated speed rpm : > 260  
Check  
speed 1/min : > 280

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 2500  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 352.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : 2500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 329.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 187.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

BREAKAWAY

Rack travel in mm : 14.30  
Rated speed rpm : 1152  
Tolerance 1/min : ± 8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 555.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 325  
rack travel mm : 5.30  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.10.94  
Test oil : ISO 4113  
Combination No. : 0401646003  
Injection pump  
Pump designation : PES6R120/720LS1505  
: -1  
EP type number : 0411626005  
Governor  
Governor design. : RQV300...1100R3K  
Governor no. : 0421415004

Cust. part No. : 51.11103-7393

## Customer-spec. information

Customer : MAN  
Motor : D2866LE401  
Power KW : 440.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750089

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.45  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 12.00  
Tolerance mm : + 0.50

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 15.30  
Tolerance mm : + 0.05



Del. quantity  
cm<sup>3</sup>/1000 strokes : 385.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 325

Rack travel in mm : 5.30  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 2.12  
Tolerance mm : + 0.25

Rated speed rpm : 1164  
guide sleeve  
travel mm : 10.04  
Tolerance mm : + 0.25

Rated speed rpm : 826  
guide sleeve  
travel mm : 6.86  
Tolerance mm : + 0.25

Rated speed rpm : 338  
guide sleeve  
travel mm : 2.28  
Tolerance mm : + 0.25

Rated speed rpm : 388

guide sleeve  
travel mm : 2.90  
Tolerance mm : + 0.25

Rated speed rpm : 510  
guide sleeve  
travel mm : 4.02  
Tolerance mm : + 0.25

Rated speed rpm : 1430  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1240

Rack travel in mm : 14.30  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 2500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 385.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
position degree : 122.0  
tolerance degree : + 4.0

rack travel mm : 14.30  
Rated speed rpm : 1152  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1295  
Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1425

---

#### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 325  
rack travel mm : 5.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 225  
CRT mm min. :  $>$  7.00

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 15.30  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 900  
rack travel mm : 13.90  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1100  
Pressure hPa : 2500  
rack travel mm : 15.30  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Rated speed rpm : 1100  
Pressure hPa : 1400  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 300  
rack travel mm : 8.60

Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $>$  260  
Check  
speed 1/min :  $>$  280

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 2500  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 352.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 2500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 329.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 187.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 14.30  
Rated speed rpm : 1152  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 555.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 325  
rack travel mm : 5.30  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.10.94  
Test oil : ISO 4113  
  
Combination No. : 0402036744  
  
Injection pump  
Pump designation : PES6P120A720/3LS3255  
EP type number : 0412026739  
  
Governor  
Governor design. : RQV300...1000PA876  
: -12  
Governor no. : 0421813897  
  
Cust. part No. : 3-7039

Customer spec. information  
Customer : MAN  
Motor : D2866LF05  
Power Kw : 272.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1417413025  
  
Inlet press. bar : 1.5  
  
Test nozzle holder  
assembly : 1688901019  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
  
Lube oil : 1409918004  
  
Test lines : 1680750067

Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 3.75  
Tolerance mm : + 0.05  
  
test only : + 0.10  
  
Rack travel in mm : 15.00  
Tolerance mm : + 0.50  
  
Firing order : 6- 2- 4- 1- 5-  
: 3  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 700  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
 cm<sup>3</sup>/1000S. : +- 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0  
 Rated speed rpm : 700  


---

 Rack travel in mm : 15.15  
 Tolerance mm : +- 0.05  


---

 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 245.0  


---

 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.0  


---

 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0  
 2nd speed rpm : 300  
 Rack travel in mm : 5.00  
 Tolerance mm : +- 0.20  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1

Rated speed rpm : 1100  
 Rack travel in mm : 16.50  
 Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 245.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

RATED SPEED

control lever  
 position degree : 302.0  
 tolerance degree : +- 4.0  
 rack travel mm : 14.10  
 Rated speed rpm : 1045  
 Tolerance 1/min : +- 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1165  
 Tolerance 1/min : +- 15  
 rack travel mm : 0.50  
 Tolerance mm : +- 0.50  
 Rated speed rpm : 1300

LOW IDLE

control lever  
 position degree : 258.0  
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 5.00  
 Tolerance mm : +- 0.10

Rated speed rpm : 200  
 CRT mm min. : > 6.50

Rated speed rpm : 340

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 15.15  
Tolerance mm : ± 0.05

Rated speed rpm : 1000  
rack travel mm : 15.15  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 8.00  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 15.15  
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 12.10  
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 470  
rack travel mm : 14.20  
Tolerance mm : ± 0.20

Pressure hPa : 110  
rack travel mm : 12.35  
Tolerance mm : ± 0.05

---

START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1000

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Del. quantity  
cm<sup>3</sup>/1000 strokes : 245.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 94.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 139.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

BREAKAWAY

Rack travel in mm : 14.10  
Rated speed rpm : 1045  
Tolerance 1/min : ± 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm3/1000 strokes : † 3.0  
Check tolerance  
cm3/1000S. : † 6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.10.94  
Test oil : ISO 4113  
Combination No. : 0402036757  
Injection pump  
Pump designation : PES6P120A720/3LS3255  
: -3  
EP type number : 0412026774  
Governor  
Governor design. : RQV300...1000PA876  
: -12  
Governor no. : 0421813897  
Cust. part No. : 51.11103-7351

## Customer-spec. information

Customer : MAN  
Motor : D2866LF05  
Power KW : 272.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1417413025  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1688901019  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Lube oil : 1409918004  
Test lines : 1680750067

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Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.75  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 15.00  
Tolerance mm : ± 0.50  
Firing order : 6- 2- 4- 1- 5-  
: 3  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0



Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0

Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 700

---

Rack travel in mm : 15.15  
 Tolerance mm : ± 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 245.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0

---

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

2nd speed rpm : 300

Rack travel in mm : 5.00  
 Tolerance mm : ± 0.20

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve  
 travel mm : 1.69  
 Tolerance mm : ± 0.25

Rated speed rpm : 1059

guide sleeve  
 travel mm : 10.13  
 Tolerance mm : ± 0.25

Rated speed rpm : 793

guide sleeve  
 travel mm : 6.88  
 Tolerance mm : ± 0.25

Rated speed rpm : 318

guide sleeve  
 travel mm : 1.89  
 Tolerance mm : ± 0.25

Rated speed rpm : 368

guide sleeve  
 travel mm : 2.47  
 Tolerance mm : ± 0.25

Rated speed rpm : 500

guide sleeve  
 travel mm : 3.63  
 Tolerance mm : ± 0.25

Rated speed rpm : 1270

guide sleeve  
 travel mm : 13.50  
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1100

Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
 hPa : 1200

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 245.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### RATED SPEED

control lever  
position degree : 302.0  
tolerance degree : ± 4.0

rack travel mm : 14.10  
Rated speed rpm : 1045  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1165  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 258.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 6.50

Rated speed rpm : 340

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 15.15  
Tolerance mm : ± 0.05

Rated speed rpm : 1000  
rack travel mm : 15.15  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 8.00  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 15.15  
Tolerance mm : ± 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 12.10  
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 470  
rack travel mm : 14.20  
Tolerance mm : ± 0.20

Pressure hPa : 110  
rack travel mm : 12.35  
Tolerance mm : ± 0.05

---

#### START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 245.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 94.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Aneroid pressure  
hPa : -

Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 139.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### BREAKAWAY

Rack travel in mm : 14.10

Rated speed rpm : 1045

Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

#### LOW IDLE

Rated speed rpm : 300

rack travel mm : 5.00

Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.94  
Test oil : ISO 4113  
  
Combination No. : 0402646640  
  
Injection pump :  
Pump designation : PE6P120A32ORS7311  
: -10  
EP type number : 0412626932  
  
Governor  
Governor design. : RGV275...1150PA1110K  
Governor no. : 0421815375  
  
Cust. part No. : 1280143/7

---

Customer spec. information  
Customer : DAF  
Motor : RS 222 M  
Power Kw : 222.0

---

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0  
  
Overflow valve : 1417413025  
  
Inlet press. bar : 1.5  
Tolerance bar : +- 0.1  
  
Test nozzle holde  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5  
  
Lube oil : 1409918004  
  
Test lines : 1680750089

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Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : +- 1.0  
  
Prestroke mm : 5.25  
Tolerance mm : +- 0.05  
  
test only : +- 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : +- 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : +- 0.30  
Check  
tolerance °NW : +- 0.75

---

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

---

BASIC SETTING

Rated speed rpm : 1130  
  
Rack travel in mm : 13.55  
Tolerance mm : +- 0.05

---

Del. quantity cm <sup>3</sup> /1000 strokes	:	218.0
<hr/>		
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	+ 4.0
<hr/>		
Speed Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	9.0
2nd speed rpm	:	275
Rack travel in mm	:	4.60
Tolerance mm	:	+ 0.10
Del. quantity cm <sup>3</sup> /1000 strokes	:	16.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 3.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 6.0
Speed Tolerance cm <sup>3</sup> /1000 strokes	:	8.0
Check tolerance cm <sup>3</sup> /1000S.	:	12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm guide sleeve travel mm	:	275
Tolerance mm	:	+ 0.25
Rated speed rpm guide sleeve travel mm	:	1203
Tolerance mm	:	+ 0.25
Rated speed rpm guide sleeve travel mm	:	814
Tolerance mm	:	+ 0.25
Rated speed rpm guide sleeve travel mm	:	300
Tolerance mm	:	+ 0.25
Rated speed rpm	:	350

guide sleeve travel mm	:	2.90
Tolerance mm	:	+ 0.25
Rated speed rpm guide sleeve travel mm	:	460
Tolerance mm	:	+ 0.25
Rated speed rpm guide sleeve travel mm	:	1480
Tolerance mm	:	+ 0.50

GUIDE SLEEVE POSITION

control lever position degree	:	- 1
Rated speed rpm	:	1280
Rack travel in mm	:	12.80
Tolerance mm	:	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1130
Aneroid pressure hPa	:	-
Del. quantity cm <sup>3</sup> /1000 strokes	:	218.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 4.0
Speed Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance cm <sup>3</sup> /1000S.	:	9.0

RATED SPEED

control lever position degree	:	121.0
tolerance degree	:	+ 4.0
rack travel mm	:	12.55
Rated speed rpm	:	1192
Tolerance 1/min	:	+ 5
rack travel mm	:	4.00
Rated speed rpm	:	1315
Tolerance 1/min	:	+ 15
rack travel mm	:	0.70

Tolerance mm : + 0.70  
Rated speed rpm : 1450

---

#### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : 3.80  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 330  
Tolerance 1/min : + 20

Rated speed rpm : 175

CRT mm min. : > 6.00

---

#### TORQUE CONTROL

Rated speed rpm : 1130  
rack travel mm : 13.55  
Tolerance mm : + 0.05

Rated speed rpm : 850  
rack travel mm : 12.80  
Tolerance mm : + 0.05

Rated speed rpm : 775  
rack travel mm : 12.45  
Tolerance mm : + 0.10

Rated speed rpm : 650  
rack travel mm : 12.20  
Tolerance mm : + 0.10

Rated speed rpm : 500  
rack travel mm : 12.10  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1130  
Pressure hPa : 1500  
rack travel mm : 13.55  
Tolerance mm : + 0.05

---

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1130  
rack travel mm : 9.40  
Tolerance mm : + 0.10

Rated speed rpm : 1130

Pressure hPa : 580  
rack travel mm : 12.40  
Tolerance mm : + 0.05

Pressure hPa : 320  
rack travel mm : 10.60  
Tolerance mm : + 0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 224.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : 12.55  
Rated speed rpm : 1192  
Tolerance 1/min : + 5

---

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : 4.60  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.94  
Test oil : ISO 4113  
Combination No. : 0402646654  
Injection pump  
Pump designation : PE6P120A320RS7360Z  
EP type number : 0412626937

Governor  
Governor design. : RQ275/1150PA1193  
Governor no. : 0421801752

Cust. part No. : 1285911/0

Customer-spec. information  
Customer : DAF  
Motor : GS 160 M  
Power KW : 160.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.40  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0



Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 4.90  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 15.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
 guide sleeve  
 travel mm : 1.92  
 Tolerance mm : + 0.10

Rated speed rpm : 1206  
 guide sleeve  
 travel mm : 6.49  
 Tolerance mm : + 0.10

Rated speed rpm : 1150  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + 0.10

Rated speed rpm : 351  
 guide sleeve  
 travel mm : 4.25  
 Tolerance mm : + 0.10

Rated speed rpm : 440  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + 0.10

Rated speed rpm : 1360  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 550

Rack travel in mm : 15.80  
 Tolerance mm : + 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : 1000

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 150.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 97.0  
 tolerance degree : + 4.0

rack travel mm : 9.40  
 Rated speed rpm : 1202  
 Tolerance 1/min : + 8

rack travel mm : 4.00  
 Rated speed rpm : 1265  
 Tolerance 1/min : + 15

rack travel mm : 0.70  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1450

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : 4.90  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min : ± 20

Rated speed rpm : 175

CRT mm min. : > 7.00

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 10.40  
Tolerance mm : ± 0.05

Rated speed rpm : 1150  
rack travel mm : 10.40  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 10.40  
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 9.50  
Tolerance mm : ± 0.10

Rated speed rpm : 600

Pressure hPa : 290  
rack travel mm : 10.15  
Tolerance mm : ± 0.05

Pressure hPa : 230  
rack travel mm : 9.70  
Tolerance mm : ± 0.10

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

BREAKAWAY

Rack travel in mm : 9.40  
Rated speed rpm : 1202  
Tolerance 1/min : ± 8

---

LOW IDLE

Rated speed rpm : 275  
rack travel mm : 4.90  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.94  
Test oil : ISO 4113

Combination No. : 0402646773

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQV300...1050PA1033  
: -15  
Governor no. : 0421814120

Cust. part No. : 0250747202

Customer-spec. information

Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 230.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.00  
 Tolerance mm :  $\pm$  0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 231.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

2nd speed rpm : 300

Rack travel in mm : 5.20  
 Tolerance mm :  $\pm$  0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.29  
 Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1107  
 guide sleeve  
 travel mm : 8.52  
 Tolerance mm :  $\pm$  0.15

Rated speed rpm : 558  
 guide sleeve  
 travel mm : 4.53  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 608

guide sleeve  
 travel mm : 5.03  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 820  
 guide sleeve  
 travel mm : 6.13  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1183  
 guide sleeve  
 travel mm : 10.00  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1280  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm :  $\pm$  0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1160

Rack travel in mm : 11.70  
 Tolerance mm :  $\pm$  1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 231.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 120.0  
 tolerance degree :  $\pm$  4.0

rack travel mm : 12.00  
 Rated speed rpm : 1095  
 Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1170  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 8.00

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.00  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
rack travel mm : 13.00  
Tolerance mm : + 0.10

Rated speed rpm : 400  
rack travel mm : 11.80  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 13.00  
Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.40

Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 400  
rack travel mm : 11.80  
Tolerance mm : + 0.10

Pressure hPa : 600  
rack travel mm : 12.80  
Tolerance mm : + 0.10

---

#### START CUT-OUT

Rated speed rpm : < 220

Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050

Del. quantity  
cm<sup>3</sup>/1000 strokes : 228.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 400

Rated speed rpm : 400

Del. quantity  
cm<sup>3</sup>/1000 strokes : 172.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Aneroid pressure  
hPa : -

Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.02.93  
Test oil : ISO 4113  
  
Combination No. : 0402646790  
  
Injection pump  
Pump designation : PE6P120A320LS7864  
EP type number : 0412626879  
  
Governor  
Governor design. : RQV350...1050PA1052  
: -2  
Governor no. : 0421814044  
  
Cust. part No. : 0230748302

---

Customer spec. information  
Customer : MB-NFZ  
Motor : OM401 LA, Euro 1  
Power kW : 213.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1417413025  
  
Inlet press. bar : 1.5  
  
Overflow quantity  
min. l/h : 120  
Tolerance l/h : + 10.0  
  
Test nozzle holder  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 2.5  
x length mm : 1000

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Prestroke mm : 5.25  
Tolerance mm : + 0.05  
  
test only : + 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : + 0.50  
  
Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

---

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

---

## BASIC SETTING

Rated speed rpm : 550  
  
Rack travel in mm : 12.45  
Tolerance mm : + 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 5.20  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1190

Rack travel in mm : 11.40  
Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 103.0  
tolerance degree : + 4.0

rack travel mm : 11.40  
Rated speed rpm : 1095  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1160  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 5.20  
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 8.70

Rated speed rpm : 415

---

TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 12.45  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
rack travel mm : 12.45  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST



MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 500

Pressure hPa : 200  
 rack travel mm : 0.45  
 Tolerance mm : ± 0.05

Pressure hPa : 450  
 rack travel mm : 1.80  
 Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : < 270  
 Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000  
 Rated speed rpm : 1050  
 Del. quantity cm<sup>3</sup>/1000 strokes : 202.0  
 Tolerance cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : ± 5.0  
 Spreed Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : 1000  
 Rated speed rpm : 1050  
 Del. quantity cm<sup>3</sup>/1000 strokes : 152.0  
 Tolerance cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance cm<sup>3</sup>/1000S. : ± 5.0

Aneroid pressure hPa : -  
 Rated speed rpm : 500  
 Del. quantity cm<sup>3</sup>/1000 strokes : 127.0  
 Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance cm<sup>3</sup>/1000S. : ± 4.0  
 Spreed Tolerance cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance cm<sup>3</sup>/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.40  
 Rated speed rpm : 1095  
 Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity cm<sup>3</sup>/1000 strokes : 205.0  
 Tolerance cm<sup>3</sup>/1000 strokes : ± 10.0  
 Check tolerance cm<sup>3</sup>/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 350  
 rack travel mm : 5.20  
 Tolerance mm : ± 0.30  
 Del. quantity cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance cm<sup>3</sup>/1000S. : ± 6.0  
 Spreed Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance cm<sup>3</sup>/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.94  
Test oil : ISO 4113  
  
Combination No. : 0402746922  
  
Injection pump  
Pump designation : PES6P120A720LS7238  
: -10  
EP type number : 0412726873  
  
Governor  
Governor design. : RQ300/1100PA1013-3  
Governor no. : 0421801609

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM447 hLA  
Power KW : 220.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1417413025  
  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
  
Tolerance l/h : + 10.0  
  
Test nozzle holde  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
  
Test lines : 1680750075

CFZ

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 5.55  
Tolerance mm : + 0.05  
  
test only : + 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : + 0.50  
  
Firing order : 6- 2- 4- 1- 5-  
: 3  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.70

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 600  
  
Rack travel in mm : 13.80  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 98.0  
tolerance degree : ± 4.0

rack travel mm : 13.50  
Rated speed rpm : 1153  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1245  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 8.40

---

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 13.80  
Tolerance mm : ± 0.10

Rated speed rpm : 1100  
rack travel mm : 14.50  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

MEASUREMENT

Pressure hPa : 150  
rack travel mm : -2.10  
Tolerance mm : +- 0.05

Pressure hPa : 350  
rack travel mm : -0.60  
Tolerance mm : +- 0.10

Pressure hPa : 800  
rack travel mm : 0.20  
Tolerance mm : +- 0.05

---

START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1400  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 222.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 13.50  
Rated speed rpm : 1153  
Tolerance 1/min : +- 8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm : +- 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.10.94  
Test oil : ISO 4113  
  
Combination No. : 0402746993  
  
Injection pump  
Pump designation : PES6P120A720LS7341  
EP type number : 0412726913  
  
Governor  
Governor design. : RQV350...1150PA1159  
Governor no. : 0421814099  
  
Cust. part No. : 0250742302

Customer-spec. information  
Customer : MTU  
Motor : 6-R-183  
Power KW : 440.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0  
  
Overflow valve : 1417413025  
  
Inlet press. bar : 1.5  
Tolerance bar : +- 0.1  
  
Tolerance l/h : +- 10.0  
  
Test nozzle holde  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5  
  
Lube oil : 1409918004

Test lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : +- 1.0  
  
Prestroke mm : 4.05  
Tolerance mm : +- 0.05  
  
test only : +- 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : +- 0.50  
  
Firing order : 6- 2- 4- 1- 5-  
: 3  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : +- 0.30  
Check  
tolerance °NW : +- 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 600  
  
Rack travel in mm : 10.20  
Tolerance mm : +- 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes :	275.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.0
<hr/>	
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes :	6.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 350
<hr/>	
Rack travel in mm :	4.10
Tolerance mm :	+ 0.30
Del. quantity	
cm <sup>3</sup> /1000 strokes :	17.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 3.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 6.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes :	6.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 350
guide sleeve	
travel mm	: 1.53
Tolerance mm	: + 0.15
<hr/>	
Rated speed rpm	: 1206
guide sleeve	
travel mm	: 8.35
Tolerance mm	: + 0.20
<hr/>	
Rated speed rpm	: 950
guide sleeve	
travel mm	: 5.78
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 416
guide sleeve	
travel mm	: 2.77
Tolerance mm	: + 0.25

Rated speed rpm	: 466
guide sleeve	
travel mm	: 3.35
Tolerance mm	: + 0.25

Rated speed rpm	: 600
guide sleeve	
travel mm	: 3.83
Tolerance mm	: + 0.25

Rated speed rpm	: 1308
guide sleeve	
travel mm	: 10.00
Tolerance mm	: + 0.25

Rated speed rpm	: 1410
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1260

Rack travel in mm :	13.00
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure	
hPa	: 800
Del. quantity	
cm <sup>3</sup> /1000 strokes :	275.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes :	6.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0

RATED SPEED

control lever	
position degree	: 120.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: 13.10
Rated speed rpm	: 1195
Tolerance 1/min	: + 5

rack travel mm : 4.00  
Rated speed rpm : 1300  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1400

---

LOW IDLE

control Lever  
position degree : 65.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 4.10  
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 5.60

Rated speed rpm : 425

---

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 10.20  
Tolerance mm : + 0.05

Rated speed rpm : 1150  
rack travel mm : 14.10  
Tolerance mm : + 0.10

Rated speed rpm : 800  
rack travel mm : 14.10  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 6.20  
Tolerance mm : + 0.10

Pressure hPa : 200  
rack travel mm : 7.20  
Tolerance mm : + 0.05

Pressure hPa : 400  
rack travel mm : 9.00  
Tolerance mm : + 0.10

Pressure hPa : 1300  
rack travel mm : 11.60  
Tolerance mm : + 0.05

Pressure hPa : 1700  
rack travel mm : 13.70  
Tolerance mm : + 0.10

---

START CUT-OUT

Rated speed rpm : < 270  
Check  
speed 1/min : < 290

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 1150  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 332.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 125.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 13.10  
Rated speed rpm : 1195  
Tolerance 1/min : + 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.60  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 410.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.10.94  
Test oil : ISO 4113  
Combination No. : 0403246037  
Injection pump  
Pump designation : PES6MW100/720RS1517  
: -3  
EP type number : 0413206020  
Governor  
Governor design. : RQV300...1200MW132  
: -9  
Governor no. : 0420083314  
Cust. part No. : 0250748702

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power kW : 125.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1680750089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 21.00  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

---

## BASIC SETTING

Rated speed rpm : 1200  
Rack travel in mm : 11.25  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.02  
Tolerance mm : +- 0.25

Rated speed rpm : 1253  
guide sleeve  
travel mm : 7.33  
Tolerance mm : +- 0.25

Rated speed rpm : 811  
guide sleeve  
travel mm : 4.16  
Tolerance mm : +- 0.25

Rated speed rpm : 550  
guide sleeve  
travel mm : 2.80  
Tolerance mm : +- 0.25

Rated speed rpm : 600  
guide sleeve  
travel mm : 3.23  
Tolerance mm : +- 0.25

Rated speed rpm : 560  
guide sleeve  
travel mm : 3.08  
Tolerance mm : +- 0.25

Rated speed rpm : 1750  
guide sleeve  
travel mm : 13.50  
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1300

Rack travel in mm : 13.00  
Tolerance mm : +- 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

RATED SPEED

control lever  
position degree : 119.0  
tolerance degree : +- 4.0

rack travel mm : 10.20  
Rated speed rpm : 1245  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1380  
Tolerance 1/min : +- 15

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1500

LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm : ± 0.10

Rated speed rpm : 200  
CRT mm min. : > 4.20

---

#### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 11.25  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 11.25  
Tolerance mm : ± 0.10

Rated speed rpm : 600  
rack travel mm : 11.25  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 11.25  
Tolerance mm : ± 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.40  
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 350  
rack travel mm : 10.85  
Tolerance mm : ± 0.10

Pressure hPa : 250  
rack travel mm : 10.15  
Tolerance mm : ± 0.10

---

#### START CUT-OUT

Rated speed rpm : < 220  
Check speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 87.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 88.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 57.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

#### BREAKAWAY

Rack travel in mm : 10.20  
Rated speed rpm : 1245  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.94  
Test oil : ISO 4113  
Combination No. : 0403466148  
Injection pump  
Pump designation : PES6MW100/120RS1137  
: -3  
EP type number : 0413406236  
Governor  
Governor design. : RSV550...1100MW2A335  
: -8  
Governor no. : 0420085244  
Cust. part No. : 3 929 184

Customer-spec. information  
Customer : CDC  
Motor : 6CTA-830/2188E  
Power KW : 209.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1680750014  
Outside diameter : 6.0

C23

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 3.55  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1  
S.o.d. blocking  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 14.70  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.5

<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 4.0
<hr/>	
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 4.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 7.5
2nd speed rpm	: 550
Rack travel in mm	: 6.60
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 23.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 2.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 4.5
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance	
cm <sup>3</sup> /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.55
Tolerance mm	: ± 0.20
governor spring	
pre-tension	
click setting x	: 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
Aneroid pressure	
hPa	: 1300
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 175.5
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0

Check tolerance	
cm <sup>3</sup> /1000S.	: ± 4.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 7.5

RATED SPEED

control lever	
position degree	: 92.0
tolerance degree	: ± 4.0
rack travel mm	: 13.70
Rated speed rpm	: 1160
Tolerance 1/min	: ± 5
rack travel mm	: 4.00
Rated speed rpm	: 1250
Tolerance 1/min	: ± 5
rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1350
rack travel mm	: 6.00
Rated speed rpm	: 1260

LOW IDLE

control lever	
position degree	: 71.0
tolerance degree	: ± 4.0

Testing:

Rated speed rpm	: 550
rack travel mm	: 6.60
Tolerance mm	: ± 0.10
Rated speed rpm	: 100
CRT mm min.	: > 19.00

TORQUE CONTROL

Rated speed rpm	: 1100
rack travel mm	: 14.70
Tolerance mm	: ± 0.05
Rated speed rpm	: 750
rack travel mm	: 15.40
Tolerance mm	: ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1300  
rack travel mm : 15.40  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 900  
rack travel mm : 14.60  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 500  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 102.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

BREAKAWAY

Rack travel in mm : 13.70  
Rated speed rpm : 1160

Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  13.0

---

LOW IDLE

Rated speed rpm : 550  
rack travel mm : 6.60  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.09.94  
Test oil : ISO 4113  
Combination No. : 0402746988  
Injection pump  
Pump designation : PES6P120A320LS7322  
EP type number : 0412726904  
Governor  
Governor design. : RQV350...1150PA1140K  
Governor no. : 0421815409  
Cust. part No. : 1823136091

---

Customer-spec. information  
Customer : NAVISTAR  
Motor : DTA-466  
Power KW : 139.5

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2417413076  
Inlet press. bar : 2.8  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1680750008  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Prestroke mm : 2.90  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 11.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

---

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

---

## BASIC SETTING

Rated speed rpm : 1150  
Rack travel in mm : 12.65  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 168.0

---



Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0

---

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 168.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

RATED SPEED

control lever  
 position degree : 120.0  
 tolerance degree : ± 6.0

rack travel mm : 11.60  
 Rated speed rpm : 1205  
 Tolerance 1/min : ± 15

rack travel mm : 4.00  
 Rated speed rpm : 1350  
 Tolerance 1/min : ± 5

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1450

LOW IDLE

control lever  
 position degree : 75.0  
 tolerance degree : ± 6.0

Testing:

Rated speed rpm : 350  
 rack travel mm : 5.00  
 Tolerance mm : ± 0.10

rack travel mm : 6.00  
 Rated speed rpm : 325

Rated speed rpm : 275

CRT mm min. : > 7.00

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1150  
 rack travel mm : 12.65  
 Tolerance mm : ± 0.05

Rated speed rpm : 750  
 rack travel mm : 11.80  
 Tolerance mm : ± 0.10

Rated speed rpm : 600  
 rack travel mm : 11.40  
 Tolerance mm : ± 0.20

ANEROID/ALTITUDE  
 COMPENSATOR TEST

SETTING

Rated speed rpm : 1150  
 Pressure hPa : 1200  
 rack travel mm : 12.65  
 Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 650  
 rack travel mm : 12.00  
 Tolerance mm : ± 0.20

Pressure hPa : 300  
 rack travel mm : 10.65  
 Tolerance mm : ± 0.05

---

START CUT-OUT

Rated speed rpm : < 280  
Check  
speed 1/min : < 290

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 1150  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

BREAKAWAY

Rack travel in mm : 11.60  
Rated speed rpm : 1205  
Tolerance 1/min : ± 15

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 30.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113

Combination No. : 0400075925

Injection pump  
Pump designation : PES5M55C32ORS201  
EP type number : 0410055972

Governor  
Governor design. : RSF350/2500M56-13  
Governor no. : 0420021171

Cust. part No. :

## Customer-spec. information

Customer : MB-PKW  
Motor : OM605  
Power KW : 83.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde  
assembly : 1688901111

Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

D01

x Length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 1.75  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1

°NW after s.o.d. : 16.5  
Tolerance : ± 0.20

Check  
tolerance °NW : ± 0.30

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 12.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

Spreed \_\_\_\_\_  
 Tolerance \_\_\_\_\_  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance \_\_\_\_\_  
 cm<sup>3</sup>/1000S. : 3.0  
 2nd speed rpm : 350  
 Rack travel in mm : 7.40  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 8.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

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IDLE STAGE

Rack travel in mm : 6.25  
 Tolerance mm : + 0.25

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FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
 Ref. pressure  
 ALDA / ADA hPa : 1100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 37.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 1.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

\_\_\_\_\_

RATED SPEED

control lever  
 position degree : 50.0  
 rack travel mm : 7.30  
 Rated speed rpm : 2700

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 3150

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SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1400  
 CRT mm max. : 1.95

\_\_\_\_\_

LOW IDLE

Setting point w/out bumper spring  
 Rated speed rpm : 350  
 rack travel mm : 7.40

SET IDLE AUXILIARY SPRING

Rated speed rpm : 475  
 rack travel mm : 5.40  
 Tolerance mm : + 0.10

rack travel mm : 3.00  
 Rated speed rpm : 700  
 Tolerance 1/min : + 50

Load pick-up

Rated speed rpm : 250  
 CRT mm min. : > 10.00  
 Rated speed rpm : 1400  
 CRT mm max. : 1.95

rack travel mm : 7.40  
 Rated speed rpm : 350

\_\_\_\_\_

TORQUE CONTROL

Rated speed rpm : 1400  
 rack travel mm : 12.75  
 Tolerance mm : + 0.05

Rated speed rpm : 2300  
 rack travel mm : 12.20  
 Tolerance mm : + 0.15

Rated speed rpm : 2500  
 rack travel mm : 11.80  
 Tolerance mm : + 0.15

\_\_\_\_\_

ADJUSTMENT TEST ADA/ALDA

### SETTING

Rated speed rpm : 1400  
Ref. pressure  
ALDA / ADA hPa : 940  
rack travel mm : -0.10  
Tolerance mm : ± 0.10

### MEASUREMENT

Rated speed rpm : 1400  
Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.40  
Tolerance mm : ± 0.10

Rated speed rpm : 1400  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -1.50  
Tolerance mm : ± 0.20

### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2500  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

### HIGH IDLE

Rated speed rpm : 2700  
rack travel mm : 7.30  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 7.40  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

### CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00  
degree : < 46.50

### SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever  
position degree : VWL  
Rated speed rpm : 400  
Rack travel in mm : 8.50

Tolerance mm : ± 0.70  
Vacuum hPa : 400.0  
Vacuum hPa : 400

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 50.0

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113  
Combination No. : 0400075926  
Injection pump  
Pump designation : PES5M55C320RS201  
EP type number : 0410055972  
Governor  
Governor design. : RSF350/2500M75-3  
Governor no. : 0420021173

Cust. part No. :

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Customer-spec. information  
Customer : MB-PKW  
Motor : OM605  
Power KW : 83.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1469990351  
Inlet press. bar : 1.0  
Test nozzle holder  
assembly : 1688901111  
Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5  
Test lines : 1680750014  
Outside diameter : 6.0  
x inside diameter : 2.0

D05

x Length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 1.75  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 21.00  
Tolerance mm : ± 1.00  
Firing order : 1- 2- 4- 5- 3  
Phasing : 0-72-144-216-288

---

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 16.5  
Tolerance : ± 0.20  
Check  
tolerance °NW : ± 0.30

---

## BASIC SETTING

Rated speed rpm : 1400  
Rack travel in mm : 12.75  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

Spreed \_\_\_\_\_  
 Tolerance \_\_\_\_\_  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance \_\_\_\_\_  
 cm<sup>3</sup>/1000S. : 3.0  
 2nd speed rpm : 350  
 Rack travel in mm : 7.40  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 8.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

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IDLE STAGE

Rack travel in mm : 6.25  
 Tolerance mm : ± 0.25

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FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
 Ref. pressure  
 ALDA / ADA hPa : 1100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 37.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 1.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

\_\_\_\_\_

RATED SPEED

control lever  
 position degree : 50.0  
 rack travel mm : 7.30  
 Rated speed rpm : 2700

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 3150

\_\_\_\_\_

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1400  
 CRT mm max. : 1.95

\_\_\_\_\_

LOW IDLE

Setting point w/out bumper spring  
 Rated speed rpm : 350  
 rack travel mm : 7.40

SET IDLE AUXILIARY SPRING

Rated speed rpm : 475  
 rack travel mm : 5.40  
 Tolerance mm : ± 0.10

rack travel mm : 3.00  
 Rated speed rpm : 700  
 Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250  
 CRT mm min. : > 10.00

Rated speed rpm : 1400  
 CRT mm max. : 1.95

rack travel mm : 7.40  
 Rated speed rpm : 350

\_\_\_\_\_

TORQUE CONTROL

Rated speed rpm : 1400  
 rack travel mm : 12.75  
 Tolerance mm : ± 0.05

Rated speed rpm : 2300  
 rack travel mm : 12.20  
 Tolerance mm : ± 0.15

Rated speed rpm : 2500  
 rack travel mm : 11.80  
 Tolerance mm : ± 0.15

\_\_\_\_\_

ADJUSTMENT TEST ADA/ALDA



## SETTING

Rated speed rpm : 1400  
Ref. pressure  
ALDA / ADA hPa : 940  
rack travel mm : -0.10  
Tolerance mm : ± 0.10

## MEASUREMENT

Rated speed rpm : 1400  
Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.40  
Tolerance mm : ± 0.10

Rated speed rpm : 1400  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -1.50  
Tolerance mm : ± 0.20

## FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2500  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

## HIGH IDLE

Rated speed rpm : 2700  
rack travel mm : 7.30  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

## LOW IDLE

Rated speed rpm : 350  
rack travel mm : 7.40  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

## CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00  
degree : < 46.50

## SETTING PNEUMATIC FAST IDLE (ELA) (PLA) POSITION

control lever  
position degree : VWL  
Rated speed rpm : 400  
Rack travel in mm : 8.50

Tolerance mm :  $\pm$  0.70  
Vacuum hPa : 400.0  
Vacuum hPa : 400

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 50.0

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0

---

ADJUST ACTIVE SURGE DAMPING ARD

Rated speed rpm : 1400  
rack travel mm : 1.70  
Tolerance mm :  $\pm$  0.15

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.10.94  
Test oil : ISO 4113  
Combination No. : 0400075937  
Injection pump  
Pump designation : PES5M55C320RS158  
EP type number : 0410055986  
Governor  
Governor design. : RSF340/2300M74  
Governor no. : 0420021140

Cust. part No. :

Customer-spec. information  
Customer : MB-PKW  
Motor : DM602A-Abgasl.  
Power KW : 92.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder  
assembly : 1688901111

Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

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x Length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1

°NW after s.o.d. : 19.5  
Tolerance : ± 0.20  
Check  
tolerance °NW : ± 0.30

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.95  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

---

Spreed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

2nd speed rpm : 345

Rack travel in mm : 5.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 6.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

IDLE STAGE

Rack travel in mm : 6.25  
Tolerance mm : ± 0.25

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

RATED SPEED

control lever  
position degree : 50.0

rack travel mm : 8.30  
Rated speed rpm : 2500

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 2950

---

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.75

---

LOW IDLE

control lever  
position degree : 10.0  
tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 345  
rack travel mm : 5.40

SET IDLE AUXILIARY SPRING

Rated speed rpm : 380  
rack travel mm : 4.30  
Tolerance mm : ± 0.10

rack travel mm : 2.50  
Rated speed rpm : 590  
Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 220

CRT mm min. : > 8.00

Rated speed rpm : 1000

CRT mm max. : 1.75

rack travel mm : 5.40  
Rated speed rpm : 345

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 13.95

Tolerance mm :  $\pm$  0.05  
Rated speed rpm : 1600  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 2200  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.10

---

#### ADJUSTMENT TEST ADA/ALDA

##### SETTING

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1600

##### MEASUREMENT

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1100

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 750

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1850  
Rated speed rpm : 1600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 51.8  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  0.8  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  1.8

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1850  
Rated speed rpm : 2200  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 49.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  2.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  0.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  1.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### HIGH IDLE

Rated speed rpm : 2500  
rack travel mm : 8.30  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

#### LOW IDLE

Rated speed rpm : 345

rack travel mm : 5.40  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 7.3  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 44.50  
degree : < 42.00

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 10.0  
tolerance degree : + 2.0  
Rated speed rpm : 370  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Current A : 1.80

control lever  
position degree : 50.0  
Rated speed rpm : 2950

Rack travel in mm : 0.50  
Tolerance mm : + 0.50

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100  
Current A : 1.80

---

TESTING & SETTING RACK TRAVEL SENSOR  
POSITION

Receiving inspection  
Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1850  
Set quantity with  
control lever  
cm<sup>3</sup>/1000 strokes : 25.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5  
Voltage Volt : 1.636  
Tolerance Volt : + 0.003  
Check tolerance  
Volt : + 0.001

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0  
Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1850  
Rack travel in mm  
Voltage Volt : 2.502  
Tolerance Volt : + 0.030  
Check tolerance  
Volt : + 0.060

---

ADJUST ACTIVE SURGE DAMPING ARD

Rated speed rpm : 1000

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.10.94  
Test oil : ISO 4113  
Combination No. : 0400075942  
Injection pump  
Pump designation : PES5M55C320RS158-1  
EP type number : 0410055979  
Governor  
Governor design. : RSF340/2300M73  
Governor no. : 0420021129

Cust. part No. :

---

Customer-spec. information  
Customer : MB-PKW  
Motor : OM602A-ECE  
Power KW : 92.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1469990351  
Inlet press. bar : 1.0  
Test nozzle holder  
assembly : 1688901111  
Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5  
Test lines : 1680750014  
Outside diameter : 6.0  
x inside diameter : 2.0

x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.25  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 21.00  
Tolerance mm : ± 1.00  
Firing order : 1- 2- 4- 5- 3  
Phasing : 0-72-144-216-288

---

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 19.5  
Tolerance : ± 0.20  
Check  
tolerance °NW : ± 0.30

---

## BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 13.95  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 1.5

---

Spread

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

2nd speed rpm : 345

Rack travel in mm : 5.30  
 Tolerance mm : ± 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 6.5

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25  
 Tolerance mm : ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Ref. pressure  
 ALDA / ADA hPa : 1850  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 53.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 1.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

RATED SPEED

control lever  
 position degree : 50.0

rack travel mm : 8.30  
 Rated speed rpm : 2500

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000  
 CRT mm max. : 1.75

LOW IDLE

control lever  
 position degree : 10.0  
 tolerance degree : ± 2.0

Setting point w/out bumper spring  
 Rated speed rpm : 345  
 rack travel mm : 5.30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400  
 rack travel mm : 4.30  
 Tolerance mm : ± 0.10

rack travel mm : 2.50  
 Rated speed rpm : 610  
 Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 220  
 CRT mm min. : > 8.00

Rated speed rpm : 1000  
 CRT mm max. : 1.75

rack travel mm : 5.30  
 Rated speed rpm : 345

TORQUE CONTROL

Rated speed rpm : 1000  
 rack travel mm : 13.95  
 Tolerance mm : ± 0.05



Rated speed rpm : 1600  
rack travel mm : 13.20  
Tolerance mm : ± 0.10

Rated speed rpm : 2200  
rack travel mm : 12.40  
Tolerance mm : ± 0.10

---

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1600  
rack travel mm : -0.65  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1100  
rack travel mm : -3.65  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -5.60  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1850  
Rated speed rpm : 1600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 51.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1850  
Rated speed rpm : 2200  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 49.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

HIGH IDLE

Rated speed rpm : 2500  
rack travel mm : 8.30  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

LOW IDLE

Rated speed rpm : 345  
rack travel mm : 5.30  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 7.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 44.50  
degree : < 42.00

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 10.0  
tolerance degree : ± 2.0  
Rated speed rpm : 345

Rack travel in mm : 12.60  
Tolerance mm : ± 0.80  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0

Current A : 1.80

control lever  
position degree : 50.0  
Rated speed rpm : 2950

Rack travel in mm : 0.50  
Tolerance mm : ± 0.50

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100  
Current A : 1.80

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0

---

ADJUST ACTIVE SURGE DAMPING ARD

Rated speed rpm : 1000

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.10.94  
Test oil : ISO 4113

Combination No. : 0400076953

Injection pump  
Pump designation : PES6M55C320RS203  
EP type number : 0410056982

Governor  
Governor design. : RSF315/2500M70-11  
Governor no. : 0420021270

Cust. part No. :

## Customer-spec. information

Customer : MB-PKW  
Motor : OM606 USA  
Power KW : 95.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde  
assembly : 1688901111

Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 1.75  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 17.0  
Tolerance : ± 0.20  
Check  
tolerance °NW : ± 0.30

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.15  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 0.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : +- 1.5

---

Spread

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

2nd speed rpm : 290

Rack travel in mm : 7.30  
 Tolerance mm : +- 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 8.5

Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 0.5

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25  
 Tolerance mm : +- 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Ref. pressure  
 ALDA / ADA hPa : 1100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 38.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 1.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

RATED SPEED

control lever  
 position degree : 50.0

rack travel mm : 7.90  
 Rated speed rpm : 2700

rack travel mm : 1.00  
 Tolerance mm : +- 1.00  
 Rated speed rpm : 3000

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1100  
 CRT mm max. : 1.95

LOW IDLE

control lever  
 position degree : 10.5  
 tolerance degree : +- 2.0

Setting point w/out bumper spring  
 Rated speed rpm : 290  
 rack travel mm : 7.30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400  
 rack travel mm : 6.00  
 Tolerance mm : +- 0.10

rack travel mm : 3.00  
 Rated speed rpm : 675  
 Tolerance 1/min : +- 50

Load pick-up

Rated speed rpm : 220  
 CRT mm min. : > 9.00

Rated speed rpm : 1100  
 CRT mm max. : 1.95

rack travel mm : 7.30  
 Rated speed rpm : 290

TORQUE CONTROL

Rated speed rpm : 1100  
 rack travel mm : 13.15  
 Tolerance mm : +- 0.05

Rated speed rpm : 2000  
rack travel mm : 12.40  
Tolerance mm : ± 0.15

Rated speed rpm : 2500  
rack travel mm : 11.90  
Tolerance mm : ± 0.15

---

ADJUST NEGATIVE TORQUE CONTROLL

Rated speed rpm : 500  
rack travel mm : 12.40  
Tolerance mm : ± 0.15

Rated speed rpm : 900  
rack travel mm : 13.00  
Tolerance mm : ± 0.15

---

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1100  
Ref. pressure  
ALDA / ADA hPa : 940  
rack travel mm : -0.10  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1100  
Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.40  
Tolerance mm : ± 0.10

Rated speed rpm : 1100  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -1.50  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2500  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

ADJUST NEGATIVE TORQUE CONTROLL

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

HIGH IDLE

Rated speed rpm : 2700  
rack travel mm : 7.90

Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 20.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 52.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

LOW IDLE

Rated speed rpm : 290  
 rack travel mm : 7.30  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 9.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 2.5  
 Spreed  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 1.5

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
 position degree : 10.5  
 tolerance degree : + 2.0  
 Rated speed rpm : 315  
 Rack travel in mm : 13.10  
 Tolerance mm : + 0.70  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 34.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 4.0

Current A : 1.80

control lever  
 position degree : 50.0  
 Rated speed rpm : 3000

Rack travel in mm : 1.00  
 Tolerance mm : + 1.00

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

Adjustment of the control-rod travel  
sensor

control lever  
 position degree : 50.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.10.94  
Test oil : ISO 4113  
Combination No. : 0400076954  
Injection pump  
Pump designation : PES6M55C320RS203  
EP type number : 0410056982  
Governor  
Governor design. : RSF315/2500M70-10  
Governor no. : 0420021175  
Cust. part No. :

Customer-spec. information  
Customer : MB-FKW  
Motor : OM606  
Power KW : 100.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1469990351  
Inlet press. bar : 1.0  
Test nozzle holde  
assembly : 1688901111  
Opening pressure  
bar : 148.5  
Tolerance bar : + 1.5  
Test lines : 1680750014  
Outside diameter : 6.0  
x inside diameter : 2.0

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x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 1.75  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 21.00  
Tolerance mm : + 1.00  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 16.5  
Tolerance : + 0.20  
Check  
tolerance °NW : + 0.30

BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 13.35  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 1.5

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

2nd speed rpm : 290

Rack travel in mm : 7.30  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

IDLE STAGE

Rack travel in mm : 6.25  
Tolerance mm : + 0.25

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Ref. pressure  
ALDA / ADA hPa : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 1.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

RATED SPEED

control lever  
position degree : 50.0

rack travel mm : 8.70  
Rated speed rpm : 2700

rack travel mm : 1.00  
Tolerance mm : + 1.00  
Rated speed rpm : 3000

---

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1100

CRT mm max. : 1.95

---

LOW IDLE

control lever  
position degree : 10.5  
tolerance degree : + 2.0

Setting point w/out bumper spring  
Rated speed rpm : 290  
rack travel mm : 7.30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400  
rack travel mm : 6.00  
Tolerance mm : + 0.10

rack travel mm : 3.00  
Rated speed rpm : 700  
Tolerance 1/min : + 50

Load pick-up

Rated speed rpm : 220

CRT mm min. : > 8.50

Rated speed rpm : 1100

CRT mm max. : 1.95

rack travel mm : 7.30  
Rated speed rpm : 290

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.35  
Tolerance mm : + 0.05



Rated speed rpm : 2000  
rack travel mm : 12.70  
Tolerance mm : ± 0.15

Rated speed rpm : 2500  
rack travel mm : 12.10  
Tolerance mm : ± 0.15

---

ADJUST NEGATIVE TORQUE CONTROLL

Rated speed rpm : 500  
rack travel mm : 12.50  
Tolerance mm : ± 0.15

Rated speed rpm : 900  
rack travel mm : 13.10  
Tolerance mm : ± 0.15

---

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1100  
Ref. pressure  
ALDA / ADA hPa : 940  
rack travel mm : -0.10  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1100  
Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.40  
Tolerance mm : ± 0.10

Rated speed rpm : 1100  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -1.50  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2500  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

ADJUST NEGATIVE TORQUE CONTROLL

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

HIGH IDLE

Rated speed rpm : 2700  
rack travel mm : 8.70

Tolerance mm : +- 0.20  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 20.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 50.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

LOW IDLE

Rated speed rpm : 290  
 rack travel mm : 7.30  
 Tolerance mm : +- 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 9.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 2.3  
 Spreed  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 1.5

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
 position degree : 10.5  
 tolerance degree : +- 2.0  
 Rated speed rpm : 315  
 Rack travel in mm : 13.10  
 Tolerance mm : +- 0.70  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 34.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 4.0

Current A : 1.80

control lever  
 position degree : 50.0  
 Rated speed rpm : 3000

Rack travel in mm : 1.00  
 Tolerance mm : +- 1.00

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

Adjustment of the control-rod travel  
sensor

control lever  
 position degree : 50.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.10.94  
Test oil : ISO 4113

Combination No. : 0400076955

Injection pump  
Pump designation : PES6M55C320RS203  
EP type number : 0410056982

Governor  
Governor design. : RSF315/2500M76  
Governor no. : 0420021174

Cust. part No. :

## Customer-spec. information

Customer : MB-PKW  
Motor : OM606  
Power KW : 100.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde  
assembly : 1688901111

Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 1.75  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1

°NW after s.o.d. : 16.5  
Tolerance : ± 0.20

Check  
tolerance °NW : ± 0.30

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

2nd speed rpm : 300

Rack travel in mm : 7.30  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25  
Tolerance mm : ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Ref. pressure  
ALDA / ADA hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

RATED SPEED

control lever  
position degree : 50.0

rack travel mm : 8.70  
Rated speed rpm : 2700

rack travel mm : 1.00  
Tolerance mm : ± 1.00  
Rated speed rpm : 3000

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1100

CRT mm max. : 1.95

LOW IDLE

control lever  
position degree : 10.5  
tolerance degree : ± 2.0

Setting point w/out bumper spring

Rated speed rpm : 300  
rack travel mm : 7.30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400  
rack travel mm : 6.00  
Tolerance mm : ± 0.10

rack travel mm : 3.00  
Rated speed rpm : 700  
Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 220

CRT mm min. : > 8.50

Rated speed rpm : 1100

CRT mm max. : 1.95

rack travel mm : 7.30  
Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.35  
Tolerance mm : ± 0.05

Rated speed rpm : 2000  
rack travel mm : 12.70  
Tolerance mm : ± 0.15

Rated speed rpm : 2500  
rack travel mm : 12.10  
Tolerance mm : ± 0.15

---

ADJUST NEGATIVE TORQUE CONTROLL

Rated speed rpm : 500  
rack travel mm : 12.50  
Tolerance mm : ± 0.15

Rated speed rpm : 900  
rack travel mm : 13.10  
Tolerance mm : ± 0.15

---

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1100  
Ref. pressure  
ALDA / ADA hPa : 940  
rack travel mm : -0.10  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1100  
Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.40  
Tolerance mm : ± 0.10

Rated speed rpm : 1100  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -1.50  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2500  
Spread  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 39.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

ADJUST NEGATIVE TORQUE CONTROLL

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

HIGH IDLE

Rated speed rpm : 2700  
rack travel mm : 8.70

Tolerance mm : +- 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 7.30  
Tolerance mm : +- 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

#### SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever  
position degree : 10.5  
tolerance degree : +- 2.0  
Rated speed rpm : 315  
  
Rack travel in mm : 13.10  
Tolerance mm : +- 0.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 34.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 4.0

Current A : 1.80

control lever  
position degree : 50.0  
Rated speed rpm : 3000

Rack travel in mm : 1.00  
Tolerance mm : +- 1.00

Current short-  
duration A : 3.00

#### Starting test

Rated speed rpm : 100

Current A : 1.80

#### Adjustment of the control-rod travel sensor

control lever  
position degree : 50.0

---

#### ADJUST ACTIVE SURGE DAMPING ARD

Rated speed rpm : 1100  
rack travel mm : 1.70  
Tolerance mm : +- 0.20

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113

Combination No. : 0400076959T8

Injection pump  
Pump designation : PES6M55C320RS180  
EP type number :

Governor  
Governor design. : RSF315/2300M64-17  
Governor no. :

Cust. part No. : T8

## Customer-spec. information

Customer : MB-PKW  
Motor : OM603A-D/A (KAT)  
Power KW : 110.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder  
assembly : 1688901111

Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

E01

x Length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 1.75  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1

°NW after s.o.d. : 17.0  
Tolerance : ± 0.20

Check  
tolerance °NW : ± 0.30

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

2nd speed rpm : 290

Rack travel in mm : 6.30  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.50  
Tolerance mm : ± 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

RATED SPEED

control lever  
position degree : 50.0

rack travel mm : 8.70  
Rated speed rpm : 2500

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 3000

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.75

LOW IDLE

control lever  
position degree : 10.0  
tolerance degree : ± 2.0

Setting point w/out bumper spring  
Rated speed rpm : 290  
rack travel mm : 6.30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400  
rack travel mm : 4.80  
Tolerance mm : ± 0.10

rack travel mm : 2.50  
Rated speed rpm : 630  
Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 200

CRT mm min. : > 7.00

Rated speed rpm : 1000

CRT mm max. : 1.75

rack travel mm : 6.30  
Rated speed rpm : 290

TORQUE CONTROL



Rated speed rpm : 1000  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

Rated speed rpm : 1600  
rack travel mm : 13.20  
Tolerance mm : ± 0.10

Rated speed rpm : 2200  
rack travel mm : 12.40  
Tolerance mm : ± 0.10

---

#### ADJUSTMENT TEST ADA/ALDA

##### SETTING

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1600  
rack travel mm : -0.50  
Tolerance mm : ± 0.20

##### MEASUREMENT

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1100  
rack travel mm : -3.15  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -5.00  
Tolerance mm : ± 0.20

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1850  
Rated speed rpm : 1600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 51.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1850

E03

Rated speed rpm : 2200  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### HIGH IDLE

Rated speed rpm : 2500  
rack travel mm : 8.70  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

LOW IDLE

Rated speed rpm : 290  
rack travel mm : 6.30  
Tolerance mm : ± 0.10  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 37.00  
degree : < 34.50

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 10.0  
tolerance degree : ± 2.0  
Rated speed rpm : 250

Rack travel in mm : 13.80  
Tolerance mm : ± 0.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 48.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0

Current A : 1.80

control lever  
position degree : 50.0  
Rated speed rpm : 2950

Rack travel in mm : 0.50  
Tolerance mm : ± 0.50

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

EO4

---

TESTING & SETTING RACK TRAVEL SENSOR  
POSITION

Receiving inspection  
Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1850  
Set quantity with  
control lever  
cm<sup>3</sup>/1000 strokes : 22.2  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Voltage Volt : 1.636  
Tolerance Volt : ± 0.003  
Check tolerance  
Volt : ± 0.001

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0  
Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1850  
Rack travel in mm  
Voltage Volt : 2.487  
Tolerance Volt : ± 0.030  
Check tolerance  
Volt : ± 0.060

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113  
Combination No. : 0400076960T8  
Injection pump  
Pump designation : PES6M55C32ORS179  
EP type number :  
Governor  
Governor design. : RSF315/2000M65-6  
Governor no. :

Cust. part No. : T8

---

Customer-spec. information  
Customer : MB-PKW  
Motor : OM603A D35 GW  
Power KW : 100.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1469990351  
Inlet press. bar : 1.0  
Test nozzle holder  
assembly : 1688901111  
Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5  
Test lines : 1680750014  
Outside diameter : 6.0  
x inside diameter : 2.0

E05

x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 1.75  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 21.00  
Tolerance mm : ± 1.00  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300

---

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 17.0  
Tolerance : ± 0.20  
Check  
tolerance °NW : ± 0.30

---

## BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 13.65  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 58.5

<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 0.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 1.5
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 2.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 3.0
<hr/>	
2nd speed rpm	: 290
<hr/>	
Rack travel in mm	: 6.30
Tolerance mm	: ± 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 10.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 0.5
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

IDLE STAGE

Rack travel in mm	: 5.50
Tolerance mm	: ± 0.25

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Ref. pressure	
ALDA / ADA hPa	: 1900
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 58.5
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 0.5
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 1.5
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 2.5
Check tolerance	
cm <sup>3</sup> /1000S.	: 3.0

---

RATED SPEED

control lever	
position degree	: 50.0
<hr/>	
rack travel mm	: 6.50
Rated speed rpm	: 2350
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 2700

---

SET IDLE CONTROL LEVER POSITION

Rated speed rpm	: 1000
<hr/>	
CRT mm max.	: 1.95

---

LOW IDLE

control lever	
position degree	: 10.0
tolerance degree	: ± 2.0

Setting point w/out bumper spring

Rated speed rpm	: 290
rack travel mm	: 6.30

---

SET IDLE AUXILIARY SPRING

Rated speed rpm	: 400
rack travel mm	: 4.80
Tolerance mm	: ± 0.10

Load pick-up

Rated speed rpm	: 200
<hr/>	
CRT mm min.	: > 7.50
<hr/>	
Rated speed rpm	: 1000
<hr/>	
CRT mm max.	: 1.95
<hr/>	
rack travel mm	: 6.30
Rated speed rpm	: 290

---

TORQUE CONTROL

Rated speed rpm	: 1000
rack travel mm	: 13.65
Tolerance mm	: ± 0.05
<hr/>	
Rated speed rpm	: 1600
rack travel mm	: 12.85
Tolerance mm	: ± 0.10

Rated speed rpm : 2000  
rack travel mm : 11.70  
Tolerance mm : ± 0.10

---

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1600  
rack travel mm : -0.40  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1100  
rack travel mm : -2.95  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -4.80  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1900  
Rated speed rpm : 1600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1900  
Rated speed rpm : 2000  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 51.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0

E07

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

HIGH IDLE

Rated speed rpm : 2350  
rack travel mm : 6.50  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

LOW IDLE

Rated speed rpm : 290  
 rack travel mm : 6.30  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 11.8  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 2.3  
 Spreed  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 1.5

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 37.00  
 degree : < 35.50

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever  
 position degree : 10.0  
 tolerance degree : ± 2.0  
 Rated speed rpm : 315

Rack travel in mm : 12.50  
 Tolerance mm : ± 0.70  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 48.0  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 48.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 4.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 4.0

Current A : 1.80

control lever  
 position degree : 50.0  
 Rated speed rpm : 2700

Rack travel in mm : 0.50  
 Tolerance mm : ± 0.50

Current short-duration A : 3.00

Starting test

Rated speed rpm : 100  
 Current A : 1.80

Adjustment of the control-rod travel sensor

control lever  
 position degree : 50.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113

Combination No. : 0400076961T8

Injection pump  
Pump designation : PES6M55C320RS157-1  
EP type number :

Governor  
Governor design. : RSF315/2300M65-5  
Governor no. :

Cust. part No. : T8

## Customer-spec. information

Customer : MB-PKW  
Motor : OM603A-ECE  
Power KW : 110.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder  
assembly : 1688901111

Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

E09

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 19.5  
Tolerance : ± 0.20  
Check  
tolerance °NW : ± 0.30

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.95  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

2nd speed rpm : 290

Rack travel in mm : 5.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 7.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

IDLE STAGE

Rack travel in mm : 6.50  
Tolerance mm : ± 0.10

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

RATED SPEED

E10

control lever  
position degree : 50.0

rack travel mm : 8.30  
Rated speed rpm : 2500

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 2950

---

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000  
CRT mm max. : 1.75

---

LOW IDLE

control lever  
position degree : 10.0  
tolerance degree : ± 2.0

Setting point w/out bumper spring  
Rated speed rpm : 290  
rack travel mm : 5.40

SET IDLE AUXILIARY SPRING

Rated speed rpm : 360  
rack travel mm : 4.30  
Tolerance mm : ± 0.10

rack travel mm : 2.50  
Rated speed rpm : 560  
Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 200  
CRT mm min. : > 7.00

Rated speed rpm : 1000  
CRT mm max. : 1.75

rack travel mm : 5.40  
Rated speed rpm : 290

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 13.95



Tolerance mm : ± 0.05  
 Rated speed rpm : 1600  
 rack travel mm : 13.20  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 2200  
 rack travel mm : 12.40  
 Tolerance mm : ± 0.10

---

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000  
 Ref. pressure  
 ALDA / ADA hPa : 1600

MEASUREMENT

Rated speed rpm : 1000  
 Ref. pressure  
 ALDA / ADA hPa : 1100  
 Rated speed rpm : 1000  
 Ref. pressure  
 ALDA / ADA hPa : 750

---

FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
 ALDA / ADA hPa : 1850  
 Rated speed rpm : 1600  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 51.8  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.8  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 1.8  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
 ALDA / ADA hPa : 1850  
 Rated speed rpm : 2200  
 Spreed  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 49.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 2.0  
 Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0  
 Ref. pressure  
 ALDA / ADA hPa : 1100  
 Rated speed rpm : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 36.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 1.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

---

HIGH IDLE

Rated speed rpm : 2500  
 rack travel mm : 8.30  
 Tolerance mm : ± 0.20  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 32.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 20.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 52.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

LOW IDLE

Rated speed rpm : 290

rack travel mm : 5.40  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.6  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 35.50  
degree : < 33.00

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 10.0  
tolerance degree : ± 2.0  
Rated speed rpm : 315  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Current A : 1.80

control lever  
position degree : 50.0  
Rated speed rpm : 2950

Rack travel in mm : 0.50  
Tolerance mm : ± 0.50

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100  
Current A : 1.80

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113

Combination No. : 0400076962T8

Injection pump  
Pump designation : PES6M55C32ORS157  
EP type number :

Governor  
Governor design. : RSF315/2300M64-15  
Governor no. :

Cust. part No. : T8

## Customer-spec. information

Customer : MB-PKW  
Motor : OM603A-Abgasl.  
Power KW : 110.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde  
assembly : 1688901111

Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

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x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1

°NW after s.o.d. : 19.5  
Tolerance : ± 0.20

Check  
tolerance °NW : ± 0.30

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.95  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

---

Spreed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

2nd speed rpm : 290

---

Rack travel in mm : 5.40  
Tolerance mm : ± 0.10

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 7.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 1.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

IDLE STAGE

---

Rack travel in mm : 6.50  
Tolerance mm : ± 0.10

---

FULL LOAD DELIVERY AT FULL LOAD STOP

---

Rated speed rpm : 1000

---

Ref. pressure  
ALDA / ADA hPa : 1850

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 53.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

RATED SPEED

---

control lever  
position degree : 50.0

---

rack travel mm : 8.30  
Rated speed rpm : 2500

---

rack travel mm : 0.50  
Tolerance mm : ± 0.50

---

Rated speed rpm : 2950

---

SET IDLE CONTROL LEVER POSITION

---

Rated speed rpm : 1000

---

CRT mm max. : 1.75

---

LOW IDLE

---

control lever  
position degree : 10.0  
tolerance degree : ± 2.0

---

Setting point w/out bumper spring

---

Rated speed rpm : 290

---

rack travel mm : 5.40

---

SET IDLE AUXILIARY SPRING

---

Rated speed rpm : 360  
rack travel mm : 4.30

---

Tolerance mm : ± 0.10

---

rack travel mm : 2.50

---

Rated speed rpm : 560

---

Tolerance 1/min : ± 50

---

Load pick-up

---

Rated speed rpm : 200

---

CRT mm min. : > 7.00

---

Rated speed rpm : 1000

---

CRT mm max. : 1.75

---

rack travel mm : 5.40

---

Rated speed rpm : 290

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

Rated speed rpm : 1600  
rack travel mm : 13.20  
Tolerance mm : ± 0.10

Rated speed rpm : 2200  
rack travel mm : 12.40  
Tolerance mm : ± 0.10

---

#### ADJUSTMENT TEST ADA/ALDA

##### SETTING

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1600

##### MEASUREMENT

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1100

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 750

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1850  
Rated speed rpm : 1600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 51.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1850  
Rated speed rpm : 2200  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 49.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### HIGH IDLE

Rated speed rpm : 2500  
rack travel mm : 8.30  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

LOW IDLE

Rated speed rpm : 290  
rack travel mm : 5.40  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.3  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 35.50  
degree : < 33.00

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 10.0  
tolerance degree :  $\pm$  2.0  
Rated speed rpm : 315  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Current A : 1.80

control lever  
position degree : 50.0  
Rated speed rpm : 2950  
Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.50

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100  
Current A : 1.80

---

TESTING & SETTING RACK TRAVEL SENSOR  
POSITION

Receiving inspection  
Rated speed rpm : 1000

Ref. pressure  
ALDA / ADA hPa : 1850  
Set quantity with  
control lever  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  0.5  
Voltage Volt : 1.636  
Tolerance Volt :  $\pm$  0.003  
Check tolerance  
Volt :  $\pm$  0.001

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0  
Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1850  
Rack travel in mm  
Voltage Volt : 2.502  
Tolerance Volt :  $\pm$  0.030  
Check tolerance  
Volt :  $\pm$  0.060

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113  
Combination No. : 0400076963T8  
Injection pump  
Pump designation : PES6M55C32ORS157-1  
EP type number :  
Governor  
Governor design. : RSF450/2300M68-1  
Governor no. :  
Cust. part No. : T8

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : DM603A (3.0L)  
Power KW : 100.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1469990351  
Inlet press. bar : 1.0  
Test nozzle holde  
assembly : 1688901111  
Opening pressure  
bar : 148.5  
Tolerance bar : + 1.5  
Test lines : 1680750014  
Outside diameter : 6.0  
x inside diameter : 2.0

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x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 2.25  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 21.00  
Tolerance mm : + 1.00  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300

---

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 19.5  
Tolerance : + 0.20  
Check  
tolerance °NW : + 0.30

---

## BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 13.15  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 48.5

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 1.5

---

Speed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

2nd speed rpm : 450

Rack travel in mm : 5.50  
 Tolerance mm : ± 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 7.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

IDLE STAGE

Rack travel in mm : 6.50  
 Tolerance mm : ± 0.10

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Ref. pressure  
 ALDA / ADA hPa : 1850  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 48.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 1.5  
 Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

---

RATED SPEED

control lever  
 position degree : 50.0

rack travel mm : 8.60  
 Rated speed rpm : 2500

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 2950

---

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.95

---

LOW IDLE

control lever  
 position degree : 12.0  
 tolerance degree : ± 2.0

Setting point w/out bumper spring  
 Rated speed rpm : 450  
 rack travel mm : 5.50

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500  
 rack travel mm : 4.40  
 Tolerance mm : ± 0.10

rack travel mm : 2.50  
 Rated speed rpm : 670  
 Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250

CRT mm min. : > 12.50

Rated speed rpm : 1000

CRT mm max. : 1.95

rack travel mm : 5.50  
 Rated speed rpm : 450

---

TORQUE CONTROL

Rated speed rpm : 1000  
 rack travel mm : 13.15  
 Tolerance mm : ± 0.05



Rated speed rpm : 1600  
rack travel mm : 12.50  
Tolerance mm : ± 0.10

Rated speed rpm : 2200  
rack travel mm : 11.60  
Tolerance mm : ± 0.10

---

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1500  
rack travel mm : -0.12  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1100  
rack travel mm : -2.45  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -4.60  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1850  
Rated speed rpm : 1600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 47.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1850  
Rated speed rpm : 2200  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 45.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 37.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

HIGH IDLE

Rated speed rpm : 2500  
rack travel mm : 8.60  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

LOW IDLE

Rated speed rpm : 450  
rack travel mm : 5.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.3  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 35.50  
degree : < 33.00

---

SETTING PNEUMATIC FAST IDLE (ELA)  
(PLA) POSITION

control lever  
position degree : VWL  
Rated speed rpm : 500  
  
Rack travel in mm : 7.60  
Tolerance mm : ± 0.80  
Vacuum hPa : 600.0  
Vacuum hPa : -

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 12.0  
tolerance degree : ± 2.0

control lever  
position degree : 50.0

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.10.94  
Test oil : ISO 4113  
Combination No. : 0400076964T8  
Injection pump  
Pump designation : PES6M55C320RS171  
EP type number :  
Governor  
Governor design. : RSF315/2300M72-4  
Governor no. :  
Cust. part No. : T8

Customer spec. information  
Customer : MB-PKW  
Motor : OM603-ECE MJ90  
Power KW : 80.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1469990351  
Inlet press. bar : 1.0  
Test nozzle holder  
assembly : 1688901111  
Opening pressure  
bar : 148.5  
Tolerance bar : + 1.5  
Test lines : 1680750014  
Outside diameter : 6.0  
x inside diameter : 2.0

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x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 2.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 21.00  
Tolerance mm : + 1.00

Firing order : 1-5-3-6-2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 19.5  
Tolerance : + 0.20  
Check  
tolerance °NW : + 0.30

## BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 12.05  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.5

<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 0.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: + 1.5
<hr/>	
Spread	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 2.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 3.0
<hr/>	
2nd speed rpm	: 300
<hr/>	
Rack travel in mm	: 6.90
Tolerance mm	: + 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 8.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 0.5
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 1.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

IDLE STAGE

Rack travel in mm	: 6.50
Tolerance mm	: + 0.10

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Ref. pressure	
ALDA / ADA hPa	: 1100
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 32.5
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 0.5
Check tolerance	
cm <sup>3</sup> /1000S.	: + 1.5
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 2.5
Check tolerance	
cm <sup>3</sup> /1000S.	: 3.0

---

RATED SPEED

control lever	
position degree	: 50.0
<hr/>	
rack travel mm	: 8.70
Rated speed rpm	: 2500
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 2950

---

SET IDLE CONTROL LEVER POSITION

Rated speed rpm	: 1000
<hr/>	
CRT mm max.	: 1.25

---

LOW IDLE

control lever	
position degree	: 14.0
tolerance degree	: + 2.0

Setting point w/out bumper spring	
Rated speed rpm	: 300
rack travel mm	: 6.90

---

SET IDLE AUXILIARY SPRING

Rated speed rpm	: 360
rack travel mm	: 5.40
Tolerance mm	: + 0.10
<hr/>	
rack travel mm	: 2.00
Rated speed rpm	: 710
Tolerance 1/min	: + 50

Load pick-up

Rated speed rpm	: 220
CRT mm min.	: > 8.50
<hr/>	
Rated speed rpm	: 1000
CRT mm max.	: 1.25
<hr/>	
rack travel mm	: 6.90
Rated speed rpm	: 300

---

TORQUE CONTROL

Rated speed rpm	: 1000
rack travel mm	: 12.05
Tolerance mm	: + 0.05

Rated speed rpm : 1400  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 2200  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.10

---

#### ADJUSTMENT TEST ADA/ALDA

##### SETTING

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 950  
rack travel mm : -0.10  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -2.00  
Tolerance mm :  $\pm$  0.20

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.8  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  0.8  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2200  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### HIGH IDLE

Rated speed rpm : 2500  
rack travel mm : 8.70  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.90  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.3  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00

degree : < 46.50

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 14.0  
tolerance degree : +- 2.0  
Rated speed rpm : 315

Rack travel in mm : 13.00  
Tolerance mm : +- 0.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 4.0

Current A : 1.80

control lever  
position degree : 50.0  
Rated speed rpm : 2950

Rack travel in mm : 0.50  
Tolerance mm : +- 0.50

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0

---

ADJUST ACTIVE SURGE DAMPING ARD

Rated speed rpm : 1000

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113  
Combination No. : 0400076965T8  
Injection pump  
Pump designation : PES6M55C320RS174  
EP type number :  
Governor  
Governor design. : RSF315/2300M72-3  
Governor no. :

Cust. part No. : T8

---

Customer-spec. information  
Customer : MB-PKW  
Motor : OM603-Abgl. MJ90  
Power KW : 76.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holder  
assembly : 1688901111

Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

E25

x Length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 1.75  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

---

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1

°NW after s.o.d. : 17.0  
Tolerance : ± 0.20

Check  
tolerance °NW : ± 0.30

---

## BASIC SETTING

Rated speed rpm : 1000

---

Rack travel in mm : 12.45  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.0

<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 0.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 1.5
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 2.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 3.0
<hr/>	
2nd speed rpm	: 300
<hr/>	
Rack travel in mm	: 7.10
Tolerance mm	: ± 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 8.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 0.5
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

IDLE STAGE

Rack travel in mm	: 6.50
Tolerance mm	: ± 0.10

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Ref. pressure	
ALDA / ADA hPa	: 1100
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 33.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 0.5
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 1.5
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 2.5
Check tolerance	
cm <sup>3</sup> /1000S.	: 3.0

---

RATED SPEED

control lever	
position degree	: 50.0
<hr/>	
rack travel mm	: 9.30
Rated speed rpm	: 2500
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 2950

---

SET IDLE CONTROL LEVER POSITION

Rated speed rpm	: 1000
<hr/>	
CRT mm max.	: 1.45

---

LOW IDLE

control lever	
position degree	: 14.0
tolerance degree	: ± 2.0

Setting point w/out bumper spring

Rated speed rpm	: 300
rack travel mm	: 7.10

---

SET IDLE AUXILIARY SPRING

Rated speed rpm	: 360
rack travel mm	: 5.40
Tolerance mm	: ± 0.10

rack travel mm	: 2.50
Rated speed rpm	: 670
Tolerance 1/min	: ± 50

Load pick-up

Rated speed rpm	: 220
<hr/>	
CRT mm min.	: > 7.00

Rated speed rpm	: 1000
<hr/>	
CRT mm max.	: 1.45

rack travel mm	: 7.10
Rated speed rpm	: 300

---

TORQUE CONTROL

Rated speed rpm	: 1000
rack travel mm	: 12.45
Tolerance mm	: ± 0.05



Rated speed rpm : 1800  
rack travel mm : 11.90  
Tolerance mm : ± 0.10

Rated speed rpm : 2200  
rack travel mm : 11.60  
Tolerance mm : ± 0.10

---

#### ADJUSTMENT TEST ADA/ALDA

##### SETTING

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 950  
rack travel mm : -0.10  
Tolerance mm : ± 0.10

##### MEASUREMENT

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.60  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -2.00  
Tolerance mm : ± 0.20

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2200  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### HIGH IDLE

Rated speed rpm : 2500  
rack travel mm : 9.30  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 7.10  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 9.3  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00

degree : < 46.50

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 14.0  
tolerance degree : + 2.0  
Rated speed rpm : 315

Rack travel in mm : 13.50  
Tolerance mm : + 0.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0

Current A : 1.80

control lever  
position degree : 50.0  
Rated speed rpm : 2950

Rack travel in mm : 0.50  
Tolerance mm : + 0.50

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0

---

ADJUST ACTIVE SURGE DAMPING ARD

Rated speed rpm : 1000

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113  
Combination No. : 0400076967T8  
Injection pump  
Pump designation : PES6M55C32ORS171-1  
EP type number :  
Governor  
Governor design. : RSF315/2300M60-8  
Governor no. :  
Cust. part No. : T8

---

Customer-spec. information  
Customer : MB-PKW  
Motor : OM603-ECE  
Power KW : 80.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1469990351  
Inlet press. bar : 1.0  
Test nozzle holder  
assembly : 1688901111  
Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5  
Test lines : 1680750014  
Outside diameter : 6.0  
x inside diameter : 2.0

F01

x Length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

---

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 19.5  
Tolerance : ± 0.20  
Check  
tolerance °NW : ± 0.30

---

## BASIC SETTING

Rated speed rpm : 1000

---

Rack travel in mm : 12.55  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.5

<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 0.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 1.5
<hr/>	
Spread	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 2.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 3.0
<hr/>	
2nd speed rpm	: 290
<hr/>	
Rack travel in mm	: 7.20
Tolerance mm	: ± 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 7.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 0.5
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 1.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

IDLE STAGE

Rack travel in mm	: 6.50
Tolerance mm	: ± 0.10

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Ref. pressure	
ALDA / ADA hPa	: 1100
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 32.5
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 0.5
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 1.5
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 2.5
Check tolerance	
cm <sup>3</sup> /1000S.	: 3.0

---

RATED SPEED

control lever	
position degree	: 50.0
<hr/>	
rack travel mm	: 9.20
Rated speed rpm	: 2500
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 2950

---

SET IDLE CONTROL LEVER POSITION

Rated speed rpm	: 1000
<hr/>	
CRT mm max.	: 1.75

---

LOW IDLE

control lever	
position degree	: 14.0
tolerance degree	: ± 2.0

Setting point w/out bumper spring	
Rated speed rpm	: 290
rack travel mm	: 7.20

---

SET IDLE AUXILIARY SPRING

Rated speed rpm	: 360
rack travel mm	: 5.60
Tolerance mm	: ± 0.10
<hr/>	
rack travel mm	: 2.50
Rated speed rpm	: 650
Tolerance 1/min	: ± 50

Load pick-up

Rated speed rpm	: 220
<hr/>	
CRT mm min.	: > 9.00
<hr/>	
Rated speed rpm	: 1000
<hr/>	
CRT mm max.	: 1.75
<hr/>	
rack travel mm	: 7.20
Rated speed rpm	: 290

---

TORQUE CONTROL

Rated speed rpm	: 1000
rack travel mm	: 12.55
Tolerance mm	: ± 0.05

Rated speed rpm : 1400  
rack travel mm : 12.40  
Tolerance mm : ± 0.10

Rated speed rpm : 2200  
rack travel mm : 12.10  
Tolerance mm : ± 0.10

---

#### ADJUSTMENT TEST ADA/ALDA

##### SETTING

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 950  
rack travel mm : -0.10  
Tolerance mm : ± 0.10

##### MEASUREMENT

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.60  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -2.00  
Tolerance mm : ± 0.20

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2200  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### HIGH IDLE

Rated speed rpm : 2500  
rack travel mm : 9.20  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

#### LOW IDLE

Rated speed rpm : 290  
rack travel mm : 7.20  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.3  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00

degree : < 46.00

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 14.0  
tolerance degree : ± 2.0  
Rated speed rpm : 315

Rack travel in mm : 13.20  
Tolerance mm : ± 0.40  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0

Current A : 1.80

control lever  
position degree : 50.0  
Rated speed rpm : 2950

Rack travel in mm : 0.50  
Tolerance mm : ± 0.50

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113

Combination No. : 0400076968T8

Injection pump  
Pump designation : PES6M55C320RS178  
EP type number :

Governor  
Governor design. : RSF315/2125M64-13  
Governor no. :

Cust. part No. : T8

## Customer-spec. information

Customer : MB-PKW  
Motor : OM603A D35 USA  
Power KW : 100.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1469990351

Inlet press. bar : 1.0

Test nozzle holde  
assembly : 1688901111

Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0

F05

x Length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 1.75  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1

°NW after s.o.d. : 17.0  
Tolerance : ± 0.20  
Check  
tolerance °NW : ± 0.30

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.75  
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes :	60.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 0.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: + 1.5
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	2.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 3.0
<hr/>	
2nd speed rpm	: 290
<hr/>	
Rack travel in mm :	5.75
Tolerance mm :	+ 0.15
Del. quantity	
cm <sup>3</sup> /1000 strokes :	7.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 0.5
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	1.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

IDLE STAGE

Rack travel in mm :	5.50
Tolerance mm :	+ 0.25

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1000
Ref. pressure	
ALDA / ADA hPa :	1850
Del. quantity	
cm <sup>3</sup> /1000 strokes :	60.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 0.5
Check tolerance	
cm <sup>3</sup> /1000S.	: + 1.5
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	2.5
Check tolerance	
cm <sup>3</sup> /1000S.	: 3.0

---

RATED SPEED

control lever	
position degree :	50.0
rack travel mm :	6.70
Rated speed rpm :	2300
<hr/>	
rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	2700

---

SET IDLE CONTROL LEVER POSITION

Rated speed rpm :	1000
CRT mm max. :	1.45

---

LOW IDLE

control lever	
position degree :	10.0
tolerance degree :	+ 2.0

Setting point w/out bumper spring	
Rated speed rpm :	290
rack travel mm :	5.75

---

SET IDLE AUXILIARY SPRING

Rated speed rpm :	400
rack travel mm :	3.85
Tolerance mm :	+ 0.25

Load pick-up

Rated speed rpm :	200
CRT mm min. :	> 7.00
Rated speed rpm :	1000
CRT mm max. :	1.45
rack travel mm :	5.75
Rated speed rpm :	290

---

TORQUE CONTROL

Rated speed rpm :	1000
rack travel mm :	13.75
Tolerance mm :	+ 0.05



Rated speed rpm : 1600  
rack travel mm : 12.80  
Tolerance mm : ± 0.10

Rated speed rpm : 2000  
rack travel mm : 11.40  
Tolerance mm : ± 0.10

---

#### ADJUSTMENT TEST ADA/ALDA

##### SETTING

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1600

##### MEASUREMENT

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1100

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 750

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1850  
Rated speed rpm : 1600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 56.3  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1850  
Rated speed rpm : 2000  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### HIGH IDLE

Rated speed rpm : 2300  
rack travel mm : 6.70  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

#### LOW IDLE

Rated speed rpm : 290

rack travel mm : 5.75  
Tolerance mm : ± 0.15  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.3  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 44.50  
degree : < 42.00

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 10.0  
tolerance degree : ± 2.0  
Rated speed rpm : 315  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Current A : 1.80

control lever  
position degree : 50.0  
Rated speed rpm : 2700

Rack travel in mm : 0.50  
Tolerance mm : ± 0.50

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100  
Current A : 1.80

---

TESTING & SETTING RACK TRAVEL SENSOR  
POSITION

Receiving inspection  
Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1850  
Set quantity with  
control lever  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Voltage Volt : 1.636  
Tolerance Volt : ± 0.003  
Check tolerance  
Volt : ± 0.001

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0  
Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 1850

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113  
Combination No. : 0400076971T8  
Injection pump  
Pump designation : PES6M55C320RS171  
EP type number :  
Governor  
Governor design. : RSF315/2300M60-8  
Governor no. :  
Cust. part No. : T8

---

Customer-spec. information  
Customer : MB-PKW  
Motor : OM603-ECE  
Power KW : 80.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1469990351  
Inlet press. bar : 1.0  
Test nozzle holder  
assembly : 1688901111  
Opening pressure  
bar : 148.5  
Tolerance bar : + 1.5  
Test lines : 1680750014  
Outside diameter : 6.0  
x inside diameter : 2.0

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x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 2.05  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 21.00  
Tolerance mm : + 1.00  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300

---

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 19.5  
Tolerance : + 0.20  
Check  
tolerance °NW : + 0.30

---

## BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 12.05  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.5

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 1.5

---

Spreed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

2nd speed rpm : 290

Rack travel in mm : 6.80  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 7.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.50  
 Tolerance mm : + 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Ref. pressure  
 ALDA / ADA hPa : 1100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 32.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 1.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

RATED SPEED

control lever  
 position degree : 50.0

rack travel mm : 8.70  
 Rated speed rpm : 2500

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 2950

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000  
 CRT mm max. : 1.25

LOW IDLE

control lever  
 position degree : 14.0  
 tolerance degree : + 2.0

Setting point w/out bumper spring  
 Rated speed rpm : 290  
 rack travel mm : 6.80

SET IDLE AUXILIARY SPRING

Rated speed rpm : 360  
 rack travel mm : 5.10  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 670  
 Tolerance 1/min : + 50

Load pick-up

Rated speed rpm : 220  
 CRT mm min. : > 8.50

Rated speed rpm : 1000  
 CRT mm max. : 1.25

rack travel mm : 6.80  
 Rated speed rpm : 290

TORQUE CONTROL

Rated speed rpm : 1000  
 rack travel mm : 12.05  
 Tolerance mm : + 0.05

Rated speed rpm : 1400  
rack travel mm : 11.80  
Tolerance mm : ± 0.10

Rated speed rpm : 2200  
rack travel mm : 11.50  
Tolerance mm : ± 0.10

---

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 950  
rack travel mm : -0.10  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.60  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -2.00  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2200  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

HIGH IDLE

Rated speed rpm : 2500  
rack travel mm : 8.70  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

LOW IDLE

Rated speed rpm : 290  
rack travel mm : 6.80  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 8.3  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00

degree : < 46.50

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 14.0  
tolerance degree : ± 2.0  
Rated speed rpm : 315

Rack travel in mm : 13.00  
Tolerance mm : ± 0.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0

Current A : 1.80

control lever  
position degree : 50.0  
Rated speed rpm : 2950

Rack travel in mm : 0.50  
Tolerance mm : ± 0.50

Current short-  
duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.10.94  
Test oil : ISO 4113  
Combination No. : 0401446150  
Injection pump  
Pump designation : PE6R130/720RS1506  
EP type number : 0411436002  
Governor  
Governor design. : RQV250...1050R4K  
Governor no. : 0421415003  
Cust. part No. : 865 020 SKOEVEDE E.KO

---

Customer-spec. information  
Customer : PENTA  
Motor : TAMD163 P-A  
Power KW : 553.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2417413078  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1688901105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1680750089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

---

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

---

## BASIC SETTING

Rated speed rpm : 1050  
Rack travel in mm : 14.70  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 464.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0

---

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 13.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 17.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
 guide sleeve  
 travel mm : 1.26  
 Tolerance mm : + 0.25

Rated speed rpm : 1106  
 guide sleeve  
 travel mm : 9.18  
 Tolerance mm : + 0.25

Rated speed rpm : 895  
 guide sleeve  
 travel mm : 6.42  
 Tolerance mm : + 0.25

Rated speed rpm : 310  
 guide sleeve  
 travel mm : 2.00  
 Tolerance mm : + 0.25

Rated speed rpm : 360  
 guide sleeve  
 travel mm : 2.41  
 Tolerance mm : + 0.25

Rated speed rpm : 570  
 guide sleeve  
 travel mm : 3.54  
 Tolerance mm : + 0.25

Rated speed rpm : 1360  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1205

Rack travel in mm : 11.00  
 Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
 Aneroid pressure  
 hPa : 2200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 464.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 17.0

RATED SPEED

tolerance degree : + 4.0

control lever  
 position degree : 119.0  
 tolerance degree : + 4.0

rack travel mm : 13.70  
 Rated speed rpm : 1105  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1200  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1300

LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : + 4.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 250  
 rack travel mm : 6.65



Tolerance mm :  $\pm$  0.20  
Rated speed rpm : 150  
CRT mm min. :  $>$  7.70  
Rated speed rpm : 380

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.15  
  
Rated speed rpm : 975  
rack travel mm : 14.60  
Tolerance mm :  $\pm$  0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1050  
Pressure hPa : 2200  
rack travel mm : 14.70  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1050  
rack travel mm : 8.70  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1050

Pressure hPa : 1570  
rack travel mm : 5.10  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 400  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 2200  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 413.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 19.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 238.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

---

BREAKAWAY

Rack travel in mm : 13.70  
Rated speed rpm : 1105  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 410.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.10.94  
Test oil : ISO 4113  
Combination No. : 0401846992  
Injection pump  
Pump designation : PE6P110A32ORS3266  
EP type number : 0411816777  
Governor  
Governor design. : RQV300...1100PA1182  
Governor no. : 0421814110  
Cust. part No. : 11030875 P02

---

Customer-spec. information  
Customer : VME  
Motor : TD63KBE LAD. L90  
Power KW : 115.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 2417413046  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1680750008  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 2.45  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.00  
Tolerance mm : + 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.50

---

## BASIC SETTING

Rated speed rpm : 1025  
Rack travel in mm : 11.80  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

<hr/>	
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes :	5.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm :	300
guide sleeve	
travel mm :	1.51
Tolerance mm :	+ 0.25

Rated speed rpm :	1172
guide sleeve	
travel mm :	8.69
Tolerance mm :	+ 0.25

Rated speed rpm :	822
guide sleeve	
travel mm :	5.40
Tolerance mm :	+ 0.25

Rated speed rpm :	356
guide sleeve	
travel mm :	1.99
Tolerance mm :	+ 0.25

Rated speed rpm :	406
guide sleeve	
travel mm :	2.42
Tolerance mm :	+ 0.25

Rated speed rpm :	510
guide sleeve	
travel mm :	3.11
Tolerance mm :	+ 0.25

Rated speed rpm :	1390
guide sleeve	
travel mm :	11.50
Tolerance mm :	+ 0.50

---

GUIDE SLEEVE POSITION

control lever	
position degree :	- 1
Rated speed rpm :	1240

Rack travel in mm :	11.00
Tolerance mm :	+ 2.00

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---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1025
Aneroid pressure	
hPa :	1500
Del. quantity	
cm <sup>3</sup> /1000 strokes :	135.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 3.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes :	5.0
Check tolerance	
cm <sup>3</sup> /1000S. :	9.0

---

RATED SPEED

control lever	
position degree :	50.0
tolerance degree :	+ 4.0

control lever	
position degree :	118.0
tolerance degree :	+ 4.0

rack travel mm :	10.80
Rated speed rpm :	1160
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1250
Tolerance 1/min :	+ 15

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1330

---

LOW IDLE

control lever	
position degree :	85.0
tolerance degree :	+ 4.0

control lever	
position degree :	18.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm :	300
rack travel mm :	5.80
Tolerance mm :	+ 0.20

Rated speed rpm : 200  
CRT mm min. : > 8.00  
Rated speed rpm : 370

---

TORQUE CONTROL

Rated speed rpm : 1025  
rack travel mm : 11.80  
Tolerance mm : + 0.05  
  
Rated speed rpm : 625  
rack travel mm : 12.20  
Tolerance mm : + 0.15  
  
Rated speed rpm : 820  
rack travel mm : 12.00  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 625  
Pressure hPa : 1500  
rack travel mm : 12.20  
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 625  
rack travel mm : 9.30  
Tolerance mm : + 0.20  
  
Rated speed rpm : 625  
  
Pressure hPa : 650  
rack travel mm : 2.30  
Tolerance mm : + 0.20  
  
Pressure hPa : 90  
rack travel mm : 0.25  
Tolerance mm : + 0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 625  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 625  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

BREAKAWAY

Rack travel in mm : 10.80  
Rated speed rpm : 1160  
Tolerance 1/min : + 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.30  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 103.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113

Combination No. : 0402746909

Injection pump  
Pump designation : PES6P120A32ORS7236  
EP type number : 0412726848

Governor  
Governor design. : RQV275...1000PA1001  
                  : -1  
Governor no. : 0421813936

Cust. part No. : CCEP 5116A PROJ.171

Customer-spec. information

Customer : RVI  
Motor : MIDR 063540 J/3  
Power KW : 306.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2417413071

Inlet press. bar : 2.5

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
                  : 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.30  
Check  
tolerance °Nw : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.80  
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes :	310.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.0
<hr/>	
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	5.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 300
<hr/>	
Rack travel in mm :	-8.50
Tolerance mm :	+ 0.20
Del. quantity	
cm <sup>3</sup> /1000 strokes :	31.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 2.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 5.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	8.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever	
position degree :	- 1
Rated speed rpm :	1150
<hr/>	
Rack travel in mm :	16.50
Tolerance mm :	+ 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	600
Aneroid pressure	
hPa :	1000
Del. quantity	
cm <sup>3</sup> /1000 strokes :	310.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0

Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	5.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0

---

RATED SPEED

control lever	
position degree :	302.0
tolerance degree :	+ 4.0
<hr/>	
rack travel mm :	-1.00
Rated speed rpm :	1070
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	-9.70
Rated speed rpm :	1210
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	-13.25
Tolerance mm :	+ 0.55
Rated speed rpm :	1350

---

LOW IDLE

control lever	
position degree :	246.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm :	300
rack travel mm :	-8.60
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	200
CRT mm max. :	< -7.20
<hr/>	
Rated speed rpm :	370

---

TORQUE CONTROL

Rated speed rpm :	1000
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	500
rack travel mm :	-5.50
Tolerance mm :	+ 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -5.00  
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 240  
rack travel mm : -3.80  
Tolerance mm : + 0.20

Pressure hPa : 600  
rack travel mm : -0.95  
Tolerance mm : + 0.05

---

START CUT-OUT

Rated speed rpm : < 225  
Check  
speed 1/min : < 245

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 287.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 152.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1070  
Tolerance 1/min : + 5

---

STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : -8.50  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113  
Combination No. : 0402746953  
Injection pump  
Pump designation : PES6P120A32ORS7294  
EP type number : 0412726895  
Governor  
Governor design. : RQV275...1000PA1001  
: -1  
Governor no. : 0421813936  
Cust. part No. : CCEP-5135 66-213

Customer spec. information  
Customer : RVI  
Motor : MIDR 063540 J/3  
Power kW : 306.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2417413071  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1688901105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Lube oil : 1409918004  
Test lines : 1680750089

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Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 13.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

## BASIC SETTING

Rated speed rpm : 600



Rack travel in mm : 13.80  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 310.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : -8.60  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.29  
Tolerance mm : + 0.10

Rated speed rpm : 1086  
guide sleeve  
travel mm : 8.46  
Tolerance mm : + 0.10

Rated speed rpm : 773  
guide sleeve  
travel mm : 6.09  
Tolerance mm : + 0.20

Rated speed rpm : 343

guide sleeve  
travel mm : 2.33  
Tolerance mm : + 0.20

Rated speed rpm : 393  
guide sleeve  
travel mm : 2.99  
Tolerance mm : + 0.20

Rated speed rpm : 490  
guide sleeve  
travel mm : 3.81  
Tolerance mm : + 0.20

Rated speed rpm : 1370  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1185

Rack travel in mm : 12.60  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 310.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
position degree : 302.0  
tolerance degree : + 4.0

rack travel mm : -1.00  
Rated speed rpm : 1070  
Tolerance 1/min : + 5

rack travel mm : -9.70  
Rated speed rpm : 1210  
Tolerance 1/min : +- 15

rack travel mm : -13.25  
Tolerance mm : +- 0.55  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 246.0  
tolerance degree : +- 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : -8.60  
Tolerance mm : +- 0.10

Rated speed rpm : 200  
CRT mm max. : < -7.20

Rated speed rpm : 370

---

#### TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000  
Tolerance mm : +- 0.10

Rated speed rpm : 500  
rack travel mm : -5.50  
Tolerance mm : +- 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -5.00  
Tolerance mm : +- 0.20

Rated speed rpm : 500

Pressure hPa : 240

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rack travel mm : -3.80  
Tolerance mm : +- 0.20

Pressure hPa : 600  
rack travel mm : -0.95  
Tolerance mm : +- 0.05

---

#### START CUT-OUT

Rated speed rpm : < 225  
Check  
speed 1/min : < 245

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 287.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 8.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 152.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1070  
Tolerance 1/min : +- 5

---

STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : -8.60  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 31.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113

Combination No. : 0402946010

Injection pump  
Pump designation : PES6P120A32ORS8028  
EP type number : 0412926021

Governor  
Governor design. : RQV275...1175PA1101K  
Governor no. : 0421815982

Cust. part No. : CCEP 5133 A 66-193

Customer-spec. information  
Customer : RVI  
Motor : MIDR 060226 M51  
Power KW : 158.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2417413078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.95  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav.  
mm : 12.30  
and maximum rack  
travel : 21.00  
Difference ° CS : 2.00  
Tolerance : ± 0.75

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1175  


---

 Rack travel in mm : 13.70  
 Tolerance mm :  $\pm$  0.05  


---

 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 270.0  


---

 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0  


---

 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  


---

 2nd speed rpm : 275  


---

 Rack travel in mm : -7.40  
 Tolerance mm :  $\pm$  0.20  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 40.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
 guide sleeve  
 travel mm : 1.01  
 Tolerance mm :  $\pm$  0.10  


---

 Rated speed rpm : 1230  
 guide sleeve  
 travel mm : 8.95  
 Tolerance mm :  $\pm$  0.10  


---

 Rated speed rpm : 877  
 guide sleeve  
 travel mm : 6.51  
 Tolerance mm :  $\pm$  0.20

Rated speed rpm : 389  
 guide sleeve  
 travel mm : 2.39  
 Tolerance mm :  $\pm$  0.20  


---

 Rated speed rpm : 439  
 guide sleeve  
 travel mm : 3.01  
 Tolerance mm :  $\pm$  0.20  


---

 Rated speed rpm : 550  
 guide sleeve  
 travel mm : 3.92  
 Tolerance mm :  $\pm$  0.20  


---

 Rated speed rpm : 1650  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm :  $\pm$  0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1430  


---

 Rack travel in mm : 11.20  
 Tolerance mm :  $\pm$  2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175  
 Aneroid pressure  
 hPa : 1600  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 270.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 295.0  
 tolerance degree :  $\pm$  4.0  


---

 rack travel mm : -1.00  
 Rated speed rpm : 1250  
 Tolerance 1/min :  $\pm$  5

rack travel mm : -9.70  
Rated speed rpm : 1420  
Tolerance 1/min : + 15

rack travel mm : -13.20  
Tolerance mm : + 0.55  
Rated speed rpm : 1550

---

#### LOW IDLE

control lever  
position degree : 245.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 275  
rack travel mm : -7.40  
Tolerance mm : + 0.10

Rated speed rpm : 200  
CRT mm max. : < -6.50  
Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1175  
Rated speed rpm : 650  
rack travel mm : -1.70  
Tolerance mm : + 0.10  
Rated speed rpm : 350  
rack travel mm : -2.95  
Tolerance mm : + 0.25

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1175  
Pressure hPa : 1600

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -5.40  
Tolerance mm : + 0.20  
Rated speed rpm : 1175

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Pressure hPa : 320  
rack travel mm : -4.70  
Tolerance mm : + 0.20

Pressure hPa : 560  
rack travel mm : -2.95  
Tolerance mm : + 0.05

---

#### START CUT-OUT

Rated speed rpm : < 215  
Check  
speed 1/min : < 235

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1600  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1250  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

LOW IDLE

Rated speed rpm : 275  
rack travel mm : -7.40  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.10.94  
Test oil : ISO 4113  
Combination No. : 0403244036  
Injection pump  
Pump designation : PES4MW100/720RS1519  
: -3  
EP type number : 0413204018  
Governor  
Governor design. : RQV300...1300MW132  
: -5  
Governor no. : 0420083308  
Cust. part No. : 0240740902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM364LA  
Power KW : 77.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1680750089  
Outside diameter : 8.0

G02

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00

Firing order : 1-3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5



Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1400  
 Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 95.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

RATED SPEED

control lever  
 position degree : 112.0  
 tolerance degree : ± 4.0  
 rack travel mm : 10.50  
 Rated speed rpm : 1345  
 Tolerance 1/min : ± 5

rack travel mm : 4.00  
 Rated speed rpm : 1435  
 Tolerance 1/min : ± 15  
 rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1550

LOW IDLE

control lever  
 position degree : 70.0  
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 4.00  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 200  
 CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1300  
 rack travel mm : 11.50  
 Tolerance mm : ± 0.05  
 Rated speed rpm : 750  
 rack travel mm : 11.50  
 Tolerance mm : ± 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
 Pressure hPa : -  
 rack travel mm : 11.50  
 Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 500  
 rack travel mm : 10.70  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 500  
 Pressure hPa : 290

rack travel mm : 11.25  
Tolerance mm : ± 0.10

Pressure hPa : 250  
rack travel mm : 11.00  
Tolerance mm : ± 0.10

---

#### START CUT-OUT

Rated speed rpm : < 200  
Check speed 1/min : < 220

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 700  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 86.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance cm<sup>3</sup>/1000S. : ± 4.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 66.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 3.0

---

#### BREAKAWAY

Rack travel in mm : 10.50  
Rated speed rpm : 1345  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 5.0

Check tolerance cm<sup>3</sup>/1000S. : ± 8.0

---

#### LOW IDLE

Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 4.5  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance cm<sup>3</sup>/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.10.94  
Test oil : ISO 4113  
Combination No. : 0403244039  
Injection pump  
Pump designation : PES4MW100/720RS1519  
: -3  
EP type number : 0413204018  
Governor  
Governor design. : RQV300...1200MW132  
: -7  
Governor no. : 0420083312  
Cust. part No. : 0250748402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM364LA  
Power KW : 77.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1680750089  
Outside diameter : 8.0

G05

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 4.55  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 21.00  
Firing order : 1- 3- 4- 2  
Phasing : 0-90-180-270  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1200  
Rack travel in mm : 11.50  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.15  
 Tolerance mm : ± 0.25

Rated speed rpm : 1254  
 guide sleeve  
 travel mm : 7.92  
 Tolerance mm : ± 0.25

Rated speed rpm : 671  
 guide sleeve  
 travel mm : 3.58  
 Tolerance mm : ± 0.25

Rated speed rpm : 721  
 guide sleeve  
 travel mm : 4.06  
 Tolerance mm : ± 0.25

Rated speed rpm : 970  
 guide sleeve  
 travel mm : 5.51  
 Tolerance mm : ± 0.25

Rated speed rpm : 1690  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1400

Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
 Aneroid pressure  
 hPa : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 95.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

RATED SPEED

control lever  
 position degree : 112.0  
 tolerance degree : ± 4.0

rack travel mm : 10.50  
 Rated speed rpm : 1245  
 Tolerance 1/min : ± 5

rack travel mm : 4.00  
 Rated speed rpm : 1365  
 Tolerance 1/min : ± 15

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1450

LOW IDLE

control lever  
 position degree : 70.0  
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 4.00  
 Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 4.50

---

**TORQUE CONTROL**

Rated speed rpm : 1200  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.10

---

**ANEROID/ALTITUDE  
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.05

**MEASUREMENT**

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 290  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 250  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.10

---

**START CUT-OUT**

Rated speed rpm : < 200  
Check speed 1/min : < 220

---

**FUEL DELIVERY CHARACTERISTICS**

Aneroid pressure hPa : 700  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 86.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 66.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

**BREAKAWAY**

Rack travel in mm : 10.50  
Rated speed rpm : 1245  
Tolerance 1/min :  $\pm$  5

---

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

**LOW IDLE**

Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance cm<sup>3</sup>/1000S. : 5.5

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.10.94  
Test oil : ISO 4113  
Combination No. : 0403246034  
Injection pump  
Pump designation : PES6MW100/72ORS1517  
                  : -2  
EP type number : 0413206019  
Governor  
Governor design. : RGV300...1300MW132  
Governor no. : 0420083291  
Cust. part No. : 0200744802

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 177.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1680750089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 21.00  
Firing order : 1- 5- 3- 6- 2-  
                  : 4  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °Nw : ± 0.75

## BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 14.40  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.02  
Tolerance mm : ± 0.25

Rated speed rpm : 1353  
guide sleeve  
travel mm : 6.70  
Tolerance mm : ± 0.25

Rated speed rpm : 1100  
guide sleeve  
travel mm : 4.76  
Tolerance mm : ± 0.25

Rated speed rpm : 490  
guide sleeve  
travel mm : 2.25  
Tolerance mm : ± 0.25

Rated speed rpm : 540  
guide sleeve  
travel mm : 2.50  
Tolerance mm : ± 0.25

Rated speed rpm : 710  
guide sleeve  
travel mm : 3.03  
Tolerance mm : ± 0.25

Rated speed rpm : 1683  
guide sleeve  
travel mm : 12.00  
Tolerance mm : ± 0.25

Rated speed rpm : 1780  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1400

Rack travel in mm : 12.00  
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

RATED SPEED

control lever  
position degree : 120.0  
tolerance degree : ± 4.0

rack travel mm : 13.40  
Rated speed rpm : 1345  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1495  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1600

LOW IDLE

control lever  
position degree : 82.0

tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 4.00  
Tolerance mm : +- 0.10

Rated speed rpm : 200

CRT mm min. : > 5.00

---

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 14.40  
Tolerance mm : +- 0.05

Rated speed rpm : 750  
rack travel mm : 14.40  
Tolerance mm : +- 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 14.40  
Tolerance mm : +- 0.10

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.40  
Tolerance mm : +- 0.05

Rated speed rpm : 500

Pressure hPa : 800  
rack travel mm : 13.70  
Tolerance mm : +- 0.10

Pressure hPa : 450  
rack travel mm : 11.30  
Tolerance mm : +- 0.10

---

START CUT-OUT

Rated speed rpm : < 200  
Check speed 1/min : < 220

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 46.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0

---

BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1345  
Tolerance 1/min : +- 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 8.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5



Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.10.94  
Test oil : ISO 4113  
Combination No. : 0403246036  
Injection pump  
Pump designation : PES6MW100/720RS1517  
: -2  
EP type number : 0413206019  
Governor  
Governor design. : RQV300...1300MW132  
: -4  
Governor no. : 0420083299  
Cust. part No. : 0240744402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power kW : 155.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1680750089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 4.55  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 21.00  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 13.50  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.02  
Tolerance mm : ± 0.25

Rated speed rpm : 1353  
guide sleeve  
travel mm : 6.70  
Tolerance mm : ± 0.25

Rated speed rpm : 1100  
guide sleeve  
travel mm : 4.76  
Tolerance mm : ± 0.25

Rated speed rpm : 490  
guide sleeve  
travel mm : 2.25  
Tolerance mm : ± 0.25

Rated speed rpm : 540  
guide sleeve  
travel mm : 2.50  
Tolerance mm : ± 0.25

Rated speed rpm : 710  
guide sleeve  
travel mm : 3.03  
Tolerance mm : ± 0.25

Rated speed rpm : 1683  
guide sleeve  
travel mm : 12.00  
Tolerance mm : ± 0.25

Rated speed rpm : 1780  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1400

Rack travel in mm : 13.00  
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

RATED SPEED

control lever  
position degree : 118.0  
tolerance degree : ± 4.0

rack travel mm : 12.50  
Rated speed rpm : 1345  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1485  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1550

LOW IDLE

control lever  
position degree : 72.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 3.80  
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 4.50

---

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 13.50  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 13.50  
Tolerance mm : + 0.10

Rated speed rpm : 600  
rack travel mm : 13.50  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 13.50  
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.00  
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 600  
rack travel mm : 12.60  
Tolerance mm : + 0.10

Pressure hPa : 300  
rack travel mm : 10.80  
Tolerance mm : + 0.10

---

START CUT-OUT

Rated speed rpm : < 200

Check  
speed 1/min : < 220

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 123.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

BREAKAWAY

Rack travel in mm : 12.50  
Rated speed rpm : 1345  
Tolerance 1/min : + 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 5.5



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.10.94  
Test oil : ISO 4113  
Combination No. : 0403246038  
Injection pump  
Pump designation : PES6MW100/720RS1517  
: -2  
EP type number : 0413206019  
Governor  
Governor design. : RQV300...1300MW132  
: -10  
Governor no. : 0420083315  
Cust. part No. : 0250743902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 155.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1680750089  
Outside diameter : 8.0

G16

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 4.55  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 21.00  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 13.50  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0  
  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.02  
 Tolerance mm : + 0.25  
  
 Rated speed rpm : 1354  
 guide sleeve  
 travel mm : 6.71  
 Tolerance mm : + 0.25  
  
 Rated speed rpm : 1090  
 guide sleeve  
 travel mm : 4.70  
 Tolerance mm : + 0.25  
  
 Rated speed rpm : 490  
 guide sleeve  
 travel mm : 2.25  
 Tolerance mm : + 0.25  
  
 Rated speed rpm : 540  
 guide sleeve  
 travel mm : 2.54  
 Tolerance mm : + 0.25  
  
 Rated speed rpm : 690  
 guide sleeve  
 travel mm : 2.97  
 Tolerance mm : + 0.25  
  
 Rated speed rpm : 1683  
 guide sleeve  
 travel mm : 12.00  
 Tolerance mm : + 0.25

Rated speed rpm : 1780  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1400  
  
 Rack travel in mm : 13.00  
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 120.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

RATED SPEED

control lever  
 position degree : 118.0  
 tolerance degree : + 4.0  
  
 rack travel mm : 12.50  
 Rated speed rpm : 1345  
 Tolerance 1/min : + 5  
  
 rack travel mm : 4.00  
 Rated speed rpm : 1485  
 Tolerance 1/min : + 15  
  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1550

LOW IDLE

control lever  
 position degree : 72.0

tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 3.80  
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 4.50

---

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 13.50  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 13.50  
Tolerance mm : ± 0.10

Rated speed rpm : 600  
rack travel mm : 13.50  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 13.50  
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.00  
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 600  
rack travel mm : 12.60  
Tolerance mm : ± 0.10

Pressure hPa : 300  
rack travel mm : 10.80  
Tolerance mm : ± 0.10

---

START CUT-OUT

Rated speed rpm : < 200

Check speed 1/min : < 220

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 120.0

Tolerance cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance cm<sup>3</sup>/1000S. : ± 4.0

Spread Tolerance cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure hPa : 1000  
Rated speed rpm : 600  
Del. quantity cm<sup>3</sup>/1000 strokes : 123.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance cm<sup>3</sup>/1000S. : ± 4.0

Aneroid pressure hPa : 1000  
Rated speed rpm : 1300  
Del. quantity cm<sup>3</sup>/1000 strokes : 104.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance cm<sup>3</sup>/1000S. : ± 3.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 52.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 3.0

---

BREAKAWAY

Rack travel in mm : 12.50  
Rated speed rpm : 1345  
Tolerance 1/min : ± 5



---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113  
Combination No. : 0403446317  
Injection pump  
Pump designation : PES6MM100/320RS1214  
: -1  
EP type number : 0413406224  
Governor  
Governor design. : RQV275...1250MM115K  
Governor no. : 0420083994

Cust. part No. :

Customer-spec. information

Customer : RVI  
Motor : MIDR 060226 W  
Power KW : 151.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2417413033

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1688901101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 18.00  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 14.15

Rack travel in mm : 14.15  
Tolerance mm : + 0.05  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.0

<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 3.0
<hr/>	
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 3.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 6.0
<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 20.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 2.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 4.5
<hr/>	
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance	
cm <sup>3</sup> /1000S.	: 5.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 275
guide sleeve	
travel mm	: 1.00
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 1344
guide sleeve	
travel mm	: 9.99
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 924
guide sleeve	
travel mm	: 6.77
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 390
guide sleeve	
travel mm	: 2.39
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 440
guide sleeve	
travel mm	: 3.01
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 550

guide sleeve	
travel mm	: 3.92
Tolerance mm	: ± 0.25

Rated speed rpm	: 1650
guide sleeve	
travel mm	: 13.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1350
<hr/>	
Rack travel in mm	: 16.50
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 119.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 3.0
<hr/>	
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance	
cm <sup>3</sup> /1000S.	: 6.0

RATED SPEED

control lever	
position degree	: 302.0
tolerance degree	: ± 4.0
<hr/>	
rack travel mm	: -1.00
Rated speed rpm	: 1305
Tolerance 1/min	: ± 5
<hr/>	
rack travel mm	: -10.10
Rated speed rpm	: 1465
Tolerance 1/min	: ± 15
<hr/>	
rack travel mm	: -13.60
Tolerance mm	: ± 0.50
Rated speed rpm	: 1600

LOW IDLE

control lever  
position degree : 244.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : -8.10  
Tolerance mm : ± 0.10

Rated speed rpm : 200  
CRT mm min. : > -7.50

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 14.15  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : -0.80  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : -5.50  
Tolerance mm : ± 0.10

Rated speed rpm : 350  
rack travel mm : -1.60  
Tolerance mm : ± 0.40

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250  
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1250  
rack travel mm : -3.00  
Tolerance mm : ± 0.20

Rated speed rpm : 1250  
Pressure hPa : 200  
rack travel mm : -2.35  
Tolerance mm : ± 0.15

Pressure hPa : 300  
rack travel mm : -1.75

Tolerance mm : ± 0.05

---

START CUT-OUT

Rated speed rpm : < 230  
Check speed 1/min : < 245

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 117.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 7.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1305  
Tolerance 1/min : ± 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.25  
Tolerance mm : ± 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 13.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.94  
Test oil : ISO 4113  
Combination No. : 0403446319  
Injection pump  
Pump designation : PES6MW100/32ORS1216  
: -1  
EP type number : 0413406223  
Governor  
Governor design. : RQV275...1250MW124K  
Governor no. : 0420083989  
Cust. part No. :

Customer-spec. information  
Customer : RVI  
Motor : MIDR 060226 U  
Power KW : 110.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 2417413033  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test Lines : 1680750008  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 4.25  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 13.00  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250  
Rack travel in mm : 13.25  
Rack travel in mm : 13.25  
Tolerance mm : + 0.05  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.0

<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: + 3.0
<hr/>	
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 3.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 6.0
<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 22.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 2.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.5
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance	
cm <sup>3</sup> /1000S.	: 5.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 275
guide sleeve	
travel mm	: 1.00
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1344
guide sleeve	
travel mm	: 9.99
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 924
guide sleeve	
travel mm	: 6.77
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 390
guide sleeve	
travel mm	: 2.39
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 440
guide sleeve	
travel mm	: 3.01
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 550

guide sleeve	
travel mm	: 3.92
Tolerance mm	: + 0.25

Rated speed rpm	: 1650
guide sleeve	
travel mm	: 13.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1350

Rack travel in mm	: 16.50
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
Aneroid pressure	
hPa	: -
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 106.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 3.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance	
cm <sup>3</sup> /1000S.	: 6.0

RATED SPEED

control lever	
position degree	: 300.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: -1.00
Rated speed rpm	: 1310
Tolerance 1/min	: + 5
<hr/>	
rack travel mm	: -9.10
Rated speed rpm	: 1465
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: -12.60
Tolerance mm	: + 0.50
Rated speed rpm	: 1600

LOW IDLE

control lever  
position degree : 245.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : -7.20  
Tolerance mm : + 0.20

Rated speed rpm : 200

CRT mm min. : > -6.60

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 13.25  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : -1.35  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : -4.50  
Tolerance mm : + 0.10

Rated speed rpm : 350  
rack travel mm : -2.40  
Tolerance mm : + 0.40

---

START CUT-OUT

Rated speed rpm : < 230  
Check  
speed 1/min : < 245

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 93.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 57.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 7.5

---

BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1310  
Tolerance 1/min : + 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 13.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.10.94  
Test oil : ISO 4113  
Combination No. : 0403446332  
Injection pump  
Pump designation : PES6MW100/720RS1131  
EP type number : 0413406123  
Governor  
Governor design. : RQV300...1300MW50  
: -34  
Governor no. : 0420083311  
Cust. part No. : 0250748202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 366 A  
Power KW : 110.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1680715089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 3.75  
Tolerance mm : + 0.05  
test only : + 0.05  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 9.05  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 65.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.40  
Tolerance mm : ± 0.25

Rated speed rpm : 1353  
guide sleeve  
travel mm : 8.64  
Tolerance mm : ± 0.25

Rated speed rpm : 885  
guide sleeve  
travel mm : 5.01  
Tolerance mm : ± 0.25

Rated speed rpm : 355  
guide sleeve  
travel mm : 1.96  
Tolerance mm : ± 0.25

Rated speed rpm : 405  
guide sleeve  
travel mm : 2.40  
Tolerance mm : ± 0.25

Rated speed rpm : 490  
guide sleeve  
travel mm : 2.86  
Tolerance mm : ± 0.25

Rated speed rpm : 1610  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1350

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 65.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

RATED SPEED

control lever  
position degree : 112.0  
tolerance degree : ± 4.0

rack travel mm : 8.05  
Rated speed rpm : 1345  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1420  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1500

LOW IDLE

control lever  
position degree : 80.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm : ± 0.10

Rated speed rpm : 200  
CRT mm min. : > 7.50

---

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 9.05  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 9.85  
Tolerance mm : ± 0.05

Rated speed rpm : 1100  
rack travel mm : 9.35  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 9.85  
Tolerance mm : ± 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.90  
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 290  
rack travel mm : 9.50  
Tolerance mm : ± 0.15

Pressure hPa : 250  
rack travel mm : 9.20  
Tolerance mm : ± 0.05

---

#### START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 65.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

#### BREAKAWAY

Rack travel in mm : 8.05  
Rated speed rpm : 1345  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 5.5



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.11.94  
Test oil : ISO 4113  
Combination No. : 0400074889  
Injection pump  
Pump designation : PES4M55C320RS172  
EP type number : 0410054958  
Governor  
Governor design. : RSF375/2300M75-2  
Governor no. : 0420021166

Cust. part No. :

## Customer-spec. information

Customer : MB-PKW  
Motor : OM601-Mopf II  
Power KW : 53.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1469990351  
Inlet press. bar : 1.0  
Test nozzle holder  
assembly : 1688901111  
Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5  
Test lines : 1680750014  
Outside diameter : 6.0  
x inside diameter : 2.0

H03

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 1.75  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00  
Tolerance mm : ± 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1

°NW after s.o.d. : 17.0  
Tolerance : ± 0.20  
Check  
tolerance °NW : ± 0.30

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

Spread \_\_\_\_\_  
 Tolerance \_\_\_\_\_  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance \_\_\_\_\_  
 cm<sup>3</sup>/1000S. : 3.0  
 2nd speed rpm : 375  
 Rack travel in mm : 6.50  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 6.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

\_\_\_\_\_

IDLE STAGE

Rack travel in mm : 6.50  
 Tolerance mm : ± 0.10

\_\_\_\_\_

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Ref. pressure  
 ALDA / ADA hPa : 1100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 33.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 1.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

\_\_\_\_\_

RATED SPEED

control lever  
 position degree : 50.0  
 rack travel mm : 8.40  
 Rated speed rpm : 2500

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 2950

\_\_\_\_\_

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 900  
 CRT mm max. : 1.45

\_\_\_\_\_

LOW IDLE

control lever  
 position degree : 14.0  
 tolerance degree : ± 2.0

Setting point w/out bumper spring  
 Rated speed rpm : 375  
 rack travel mm : 6.50

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450  
 rack travel mm : 4.90  
 Tolerance mm : ± 0.10

rack travel mm : 2.50  
 Rated speed rpm : 670  
 Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250  
 CRT mm min. : > 11.00  
 Rated speed rpm : 900  
 CRT mm max. : 1.45  
 rack travel mm : 6.50  
 Rated speed rpm : 375

\_\_\_\_\_

TORQUE CONTROL

Rated speed rpm : 900  
 rack travel mm : 12.35  
 Tolerance mm : ± 0.05

Rated speed rpm : 1400  
 rack travel mm : 12.05  
 Tolerance mm : ± 0.10

Rated speed rpm : 2300  
 rack travel mm : 11.40

Tolerance mm : ± 0.10

---

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 900  
Ref. pressure  
ALDA / ADA hPa : 950  
rack travel mm : -0.10  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 900  
Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.60  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -2.00  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2300  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

H05

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

HIGH IDLE

Rated speed rpm : 2500  
rack travel mm : 8.40  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

LOW IDLE

Rated speed rpm : 375  
rack travel mm : 6.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 7.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00  
degree : < 46.50

---

SETTING PNEUMATIC FAST IDLE (ELA)  
(PLA) POSITION

control lever  
position degree : VWL  
Rated speed rpm : 425

Rack travel in mm : 8.90  
Tolerance mm :  $\pm$  0.80  
Vacuum hPa : 400.0  
Vacuum hPa : -

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 14.0  
tolerance degree :  $\pm$  2.0

control lever  
position degree : 50.0

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0

---

ADJUST ACTIVE SURGE DAMPING ARD

Rated speed rpm : 900  
rack travel mm : -1.70  
Tolerance mm :  $\pm$  0.15



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.11.94
Test oil : ISO 4113
Combination No. : 0400074891
Injection pump
Pump designation : PES4M55C320RS169
EP type number : 0410054959
Governor
Governor design. : RSF375/2300M75
Governor no. : 0420021160

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601-ECE
Power KW : 55.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1469990351
Inlet press. bar : 1.0
Test nozzle holde
assembly : 1688901111
Opening pressure
bar : 148.5
Tolerance bar : ± 1.5
Test lines : 1680750014
Outside diameter : 6.0
x inside diameter : 2.0

H07

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 19.5
Tolerance : ± 0.20

Check
tolerance °NW : ± 0.30

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 33.5

Tolerance
cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : ± 1.5

Spreed	_____
Tolerance	_____
cm <sup>3</sup> /1000 strokes :	2.5
Check tolerance	_____
cm <sup>3</sup> /1000S.	: 3.0
2nd speed rpm :	375
Rack travel in mm :	6.50
Tolerance mm :	+ 0.10
Del. quantity	_____
cm <sup>3</sup> /1000 strokes :	6.5
Tolerance	_____
cm <sup>3</sup> /1000 strokes :	+ 0.5
Spreed	_____
Tolerance	_____
cm <sup>3</sup> /1000 strokes :	1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

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IDLE STAGE

Rack travel in mm :	6.50
Tolerance mm :	+ 0.10

\_\_\_\_\_

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1000
Ref. pressure	_____
ALDA / ADA hPa :	1100
Del. quantity	_____
cm <sup>3</sup> /1000 strokes :	33.5
Tolerance	_____
cm <sup>3</sup> /1000 strokes :	+ 0.5
Check tolerance	_____
cm <sup>3</sup> /1000S.	: + 1.5
Spreed	_____
Tolerance	_____
cm <sup>3</sup> /1000 strokes :	2.5
Check tolerance	_____
cm <sup>3</sup> /1000S.	: 3.0

\_\_\_\_\_

RATED SPEED

control lever	_____
position degree :	50.0
rack travel mm :	8.70
Rated speed rpm :	2500

H08

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	2950

\_\_\_\_\_

SET IDLE CONTROL LEVER POSITION

Rated speed rpm :	1000
CRT mm max. :	1.25

\_\_\_\_\_

LOW IDLE

control lever	_____
position degree :	14.0
tolerance degree :	+ 2.0

Setting point w/out bumper spring	_____
Rated speed rpm :	375
rack travel mm :	6.50

SET IDLE AUXILIARY SPRING

Rated speed rpm :	400
rack travel mm :	5.40
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	710
Tolerance 1/min :	+ 50

Load pick-up

Rated speed rpm :	250
CRT mm min. :	> 11.00

Rated speed rpm :	1000
CRT mm max. :	1.25

rack travel mm :	6.50
Rated speed rpm :	375

\_\_\_\_\_

TORQUE CONTROL

Rated speed rpm :	1000
rack travel mm :	12.35
Tolerance mm :	+ 0.05

Rated speed rpm :	1800
rack travel mm :	11.80
Tolerance mm :	+ 0.10

Rated speed rpm :	2300
rack travel mm :	11.50

Tolerance mm : ± 0.10

---

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 950  
rack travel mm : -0.10  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.60  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -2.00  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2300  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

HIGH IDLE

Rated speed rpm : 2500  
rack travel mm : 8.70  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

LOW IDLE

Rated speed rpm : 375  
rack travel mm : 6.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 7.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00  
degree : < 46.50

---

SETTING PNEUMATIC FAST IDLE (ELA)  
(PLA) POSITION

control lever  
position degree : VWL  
Rated speed rpm : 425

Rack travel in mm : 8.90  
Tolerance mm :  $\pm$  0.80  
Vacuum hPa : 400.0  
Vacuum hPa : -

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 14.0  
tolerance degree :  $\pm$  2.0

control lever  
position degree : 50.0

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0

---

ADJUST ACTIVE SURGE DAMPING ARD

Rated speed rpm : 1000

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.09.94  
Test oil : ISO 4113  
Combination No. : 0400074898T8  
Injection pump  
Pump designation : PES4M55C32ORS172  
EP type number :  
Governor  
Governor design. : RSF375/2300M56-10  
Governor no. :  
Cust. part No. : T8

---

Customer-spec. information  
Customer : MB-PKW  
Motor : OM601-Abgl. MJ90  
Power KW : 53.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1469990351  
Inlet press. bar : 1.0  
Test nozzle holder  
assembly : 1688901111  
Opening pressure  
bar : 148.5  
Tolerance bar : ± 1.5  
Test lines : 1680750014  
Outside diameter : 6.0  
x inside diameter : 2.0

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x Length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 1.75  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 21.00  
Tolerance mm : ± 1.00  
Firing order : 1-3-4-2  
Phasing : 0-90-180-270

---

## BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking  
Barrel no. : 1  
°NW after s.o.d. : 17.0  
Tolerance : ± 0.20  
Check  
tolerance °NW : ± 0.30

---

## BASIC SETTING

Rated speed rpm : 900  
Rack travel in mm : 12.35  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.5

Spread \_\_\_\_\_  
 Tolerance \_\_\_\_\_  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance \_\_\_\_\_  
 cm<sup>3</sup>/1000S. : 3.0  
 2nd speed rpm : 375  
 Rack travel in mm : 6.50  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 6.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

\_\_\_\_\_

IDLE STAGE

Rack travel in mm : 6.50  
 Tolerance mm : ± 0.10

\_\_\_\_\_

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Ref. pressure  
 ALDA / ADA hPa : 1100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 33.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 1.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.0

\_\_\_\_\_

RATED SPEED

control lever  
 position degree : 50.0  
 rack travel mm : 8.50  
 Rated speed rpm : 2500

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 2950

\_\_\_\_\_

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 900  
 CRT mm max. : 1.45

\_\_\_\_\_

LOW IDLE

control lever  
 position degree : 14.0  
 tolerance degree : ± 2.0

Setting point w/out bumper spring  
 Rated speed rpm : 375  
 rack travel mm : 6.50

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450  
 rack travel mm : 4.90  
 Tolerance mm : ± 0.10

rack travel mm : 2.50  
 Rated speed rpm : 670  
 Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250  
 CRT mm min. : > 11.00

Rated speed rpm : 900  
 CRT mm max. : 1.45

rack travel mm : 6.50  
 Rated speed rpm : 375

\_\_\_\_\_

TORQUE CONTROL

Rated speed rpm : 900  
 rack travel mm : 12.35  
 Tolerance mm : ± 0.05

Rated speed rpm : 1400  
 rack travel mm : 12.05  
 Tolerance mm : ± 0.10

Rated speed rpm : 2300  
 rack travel mm : 11.40

Tolerance mm : ± 0.10

---

#### ADJUSTMENT TEST ADA/ALDA

##### SETTING

Rated speed rpm : 900  
Ref. pressure  
ALDA / ADA hPa : 950  
rack travel mm : -0.10  
Tolerance mm : ± 0.10

##### MEASUREMENT

Rated speed rpm : 900  
Ref. pressure  
ALDA / ADA hPa : 900  
rack travel mm : -0.60  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
Ref. pressure  
ALDA / ADA hPa : 750  
rack travel mm : -2.00  
Tolerance mm : ± 0.20

---

#### FUEL DELIVERY CHARACTERISTICS

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 1400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.8  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 1.8  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

Ref. pressure  
ALDA / ADA hPa : 1100  
Rated speed rpm : 2300  
Spreed  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### HIGH IDLE

Rated speed rpm : 2500  
rack travel mm : 8.50  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

#### LOW IDLE

Rated speed rpm : 375  
rack travel mm : 6.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 7.8  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.3  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000S. : 1.5

---

#### CHECKING THE IDLE-SPEED AUXILIARY

degree : > 49.00  
degree : < 46.50

---

SETTING PNEUMATIC FAST IDLE (ELA)  
(PLA) POSITION

control lever  
position degree : VWL  
Rated speed rpm : 425

Rack travel in mm : 8.90  
Tolerance mm :  $\pm$  0.80  
Vacuum hPa : 400.0  
Vacuum hPa : -

---

SETTING/TESTING ELECTRONIC IDLE  
REGULATION (ELR)

control lever  
position degree : 14.0  
tolerance degree :  $\pm$  2.0

control lever  
position degree : 50.0

Adjustment of the control-rod travel  
sensor

control lever  
position degree : 50.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.11.94  
Test oil : ISO 4113

Combination No. : 0402640844

Injection pump  
Pump designation : PE12P120A520LS7879  
EP type number : 0412620841

Governor  
Governor design. : RQV350...1200PA1167  
Governor no. : 0421814107

Cust. part No. : 0250742402

Customer-spec. information

Customer : MTU  
Motor : 12V183-03  
Power KW : 845.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 150  
Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

H15

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.05  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 0.50

Firing order : 12- 1- 5- 9- 8  
: - 3- 4- 11- 10  
: - 2- 6- 7

Phasing : 0-45-60-105-120  
: -165-180-225-240  
: -285-300-345

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.70  
 Tolerance mm : + 0.10

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 306.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

---

2nd speed rpm : 350

Rack travel in mm : 4.00  
 Tolerance mm : + 0.30

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 10.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 15.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.53  
 Tolerance mm : + 0.15

Rated speed rpm : 1281  
 guide sleeve  
 travel mm : 8.53  
 Tolerance mm : + 0.20

Rated speed rpm : 990  
 guide sleeve  
 travel mm : 5.68  
 Tolerance mm : + 0.25

Rated speed rpm : 420

guide sleeve  
 travel mm : 2.86  
 Tolerance mm : + 0.25

Rated speed rpm : 470  
 guide sleeve  
 travel mm : 3.42  
 Tolerance mm : + 0.25

Rated speed rpm : 620  
 guide sleeve  
 travel mm : 3.89  
 Tolerance mm : + 0.25

Rated speed rpm : 1366  
 guide sleeve  
 travel mm : 10.00  
 Tolerance mm : + 0.25

Rated speed rpm : 1470  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1310

Rack travel in mm : 12.00  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
 Aneroid pressure  
 hPa : 2000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 306.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

RATED SPEED

control lever  
 position degree : 122.0  
 tolerance degree : + 4.0

rack travel mm : 11.70  
Rated speed rpm : 1245  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1330  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1470

---

#### LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 4.00  
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 6.30

Rated speed rpm : 450

---

#### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 12.70  
Tolerance mm : + 0.10

Rated speed rpm : 600  
rack travel mm : 9.50  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 5.80  
Tolerance mm : + 0.15

Pressure hPa : 400  
rack travel mm : 7.70  
Tolerance mm : + 0.05

Pressure hPa : 250  
rack travel mm : 6.80  
Tolerance mm : + 0.10

Pressure hPa : 1600  
rack travel mm : 11.70  
Tolerance mm : + 0.05

Pressure hPa : 1200  
rack travel mm : 10.15  
Tolerance mm : + 0.10

---

#### START CUT-OUT

Rated speed rpm : < 270  
Check  
speed 1/min : < 290

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 800  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 261.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 118.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

---

#### BREAKAWAY

Rack travel in mm : 11.70  
Rated speed rpm : 1245  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 360.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.00  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.94  
Test oil : ISO 4113  
  
Combination No. : 0402646792  
  
Injection pump  
Pump designation : PE6P120A320LS7854  
EP type number : 0412626872  
  
Governor  
Governor design. : RQV350...1050PA1051  
Governor no. : 0421814036  
  
Cust. part No. : 0230746202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1417413025  
  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
  
Overflow quantity  
min. l/h : 115  
Tolerance l/h : + 10.0  
  
Test nozzle holde  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 5.25  
Tolerance mm : + 0.05  
  
test only : + 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : + 0.50  
  
Firing order : 6- 3- 5- 2- 4-  
: 1-  
  
Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.35  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 4.80  
Tolerance mm : + 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.22  
Tolerance mm : + 0.10

Rated speed rpm : 1108  
guide sleeve  
travel mm : 9.64  
Tolerance mm : + 0.10

Rated speed rpm : 403  
guide sleeve  
travel mm : 1.97  
Tolerance mm : + 0.25

Rated speed rpm : 453

guide sleeve  
travel mm : 2.52  
Tolerance mm : + 0.25

Rated speed rpm : 770  
guide sleeve  
travel mm : 4.92  
Tolerance mm : + 0.25

Rated speed rpm : 1320  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1160

Rack travel in mm : 14.00  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
position degree : 105.0  
tolerance degree : + 4.0

rack travel mm : 12.10  
Rated speed rpm : 1095  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1170  
Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 4.80  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 410  
Tolerance 1/min : + 20

Rated speed rpm : 250

CRT mm min. : > 8.50

Rated speed rpm : 400

---

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 13.35  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
rack travel mm : 13.20  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
rack travel mm : 10.70  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : -

MEASUREMENT

Pressure hPa : 275  
Rated speed rpm : 500  
rack travel mm : 0.85  
Tolerance mm : + 0.05

Rated speed rpm : 500

H21

Pressure hPa : 580  
rack travel mm : 2.50  
Tolerance mm : + 0.10

---

START CUT-OUT

Rated speed rpm : < 270  
Check  
speed 1/min : < 290

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 12.10

Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.94  
Test oil : ISO 4113  
Combination No. : 0402646993  
Injection pump  
Pump designation : PE6P120A320LS7852-1  
EP type number : 0412626910  
Governor  
Governor design. : RG300/1050PA1030-18  
Governor no. : 0421801746  
Cust. part No. : 0230744502

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1417413025  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Test nozzle holder  
assembly : 1688901105  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Lube oil : 1409918004  
Test lines : 1680750075

H23

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 5.25  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 20.50  
Tolerance mm : + 0.50  
Firing order : 6-3-5-2-4-  
: 1-  
Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

---

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

---

## BASIC SETTING

Rated speed rpm : 600  
Rack travel in mm : 14.40  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 248.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.90  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.66  
Tolerance mm : ± 0.10

Rated speed rpm : 1109  
guide sleeve  
travel mm : 6.36  
Tolerance mm : ± 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 401  
guide sleeve  
travel mm : 4.01  
Tolerance mm : ± 0.10

Rated speed rpm : 510

guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 248.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : ± 4.0

rack travel mm : 13.40  
Rated speed rpm : 1103  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1300

LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 8.30

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 14.40  
Tolerance mm : + 0.05

Rated speed rpm : 1050  
rack travel mm : 14.40  
Tolerance mm : + 0.10

Rated speed rpm : 400  
rack travel mm : 13.60  
Tolerance mm : + 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 14.05  
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.35  
Tolerance mm : + 0.20

Rated speed rpm : 400

Pressure hPa : 550  
rack travel mm : 13.60  
Tolerance mm : + 0.10

Pressure hPa : 250

rack travel mm : 11.45  
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1103  
Tolerance 1/min : + 8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.94  
Test oil : ISO 4113

Combination No. : 0402646996

Injection pump  
Pump designation : PE6P120A320LS7852  
EP type number : 0412626871

Governor  
Governor design. : RQ300/1050PA1031-4  
Governor no. : 0421801656

Cust. part No. : 0230744702

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

H27

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.40  
 Tolerance mm :  $\pm$  0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 248.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

2nd speed rpm : 300

Rack travel in mm : 5.90  
 Tolerance mm :  $\pm$  0.30

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 2.13  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1095  
 guide sleeve  
 travel mm : 6.55  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
 guide sleeve  
 travel mm : 6.20  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 913

guide sleeve  
 travel mm : 6.05  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 413  
 guide sleeve  
 travel mm : 4.85  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1270  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm :  $\pm$  0.50

Rated speed rpm : 945  
 guide sleeve  
 travel mm : 6.15  
 Tolerance mm :  $\pm$  0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
 Tolerance mm :  $\pm$  0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure  
 hPa : 1100

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 248.0

Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 99.0  
 tolerance degree :  $\pm$  4.0

rack travel mm : 13.40  
 Rated speed rpm : 1098

Tolerance 1/min : + 8  
 rack travel mm : 4.00  
 Rated speed rpm : 1195  
 Tolerance 1/min : + 15  
 rack travel mm : 0.75  
 Tolerance mm : + 0.75  
 Rated speed rpm : 1300

---

LOW IDLE

control lever  
 position degree : 71.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 3.50  
 Tolerance mm : + 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 340  
 Tolerance 1/min : + 20  
 Rated speed rpm : 200  
 CRT mm min. : > 5.70

---

TORQUE CONTROL

Rated speed rpm : 600  
 rack travel mm : 14.40  
 Tolerance mm : + 0.05  
 Rated speed rpm : 1050  
 rack travel mm : 14.40  
 Tolerance mm : + 0.10  
 Rated speed rpm : 400  
 rack travel mm : 13.60  
 Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
 COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
 Pressure hPa : 1100  
 rack travel mm : 14.05  
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 400  
 rack travel mm : 10.35  
 Tolerance mm : + 0.20

Rated speed rpm : 400

Pressure hPa : 550  
 rack travel mm : 13.60  
 Tolerance mm : + 0.10

Pressure hPa : 250  
 rack travel mm : 11.45  
 Tolerance mm : + 0.10

---

START CUT-OUT

Rated speed rpm : < 220  
 Check  
 speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1100  
 Rated speed rpm : 1050  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 240.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
 hPa : 550  
 Rated speed rpm : 400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 208.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 136.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1098  
Tolerance 1/min : + 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm : +- 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.94  
Test oil : ISO 4113

Combination No. : 0402646998

Injection pump  
Pump designation : PE6P120A320LS7852  
EP type number : 0412626871

Governor  
Governor design. : RQV300...1050PA1033  
: -6  
Governor no. : 0421814009

Cust. part No. : 0230744602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 LA  
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.40  
 Tolerance mm : + 0.05  


---

 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 248.0  


---

 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  


---

 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 300  
 Rack travel in mm : 5.90  
 Tolerance mm : + 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1170  
 Rack travel in mm : 13.00  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure  
 hPa : 1100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 248.0

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Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 120.0  
 tolerance degree : + 4.0  
 rack travel mm : 13.40  
 Rated speed rpm : 1095  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1180  
 Tolerance 1/min : + 15  
 rack travel mm : 0.75  
 Tolerance mm : + 0.75  
 Rated speed rpm : 1300

LOW IDLE

control lever  
 position degree : 82.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 5.90  
 Tolerance mm : + 0.10  
 Rated speed rpm : 200  
 CRT mm min. : > 8.70  
 Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 600  
 rack travel mm : 14.40  
 Tolerance mm : + 0.05  
 Rated speed rpm : 1050  
 rack travel mm : 14.40  
 Tolerance mm : + 0.10

Rated speed rpm : 400  
rack travel mm : 13.60  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1100  
rack travel mm : 14.05  
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.35  
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 550  
rack travel mm : 13.60  
Tolerance mm : ± 0.10

Pressure hPa : 250  
rack travel mm : 11.45  
Tolerance mm : ± 0.10

---

START CUT-OUT

Rated speed rpm : < 240  
Check  
speed 1/min : < 260

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.90  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.11.94  
Test oil : ISO 4113  
Combination No. : 0403244038  
Injection pump  
Pump designation : PES4MW100/720RS1519  
: -3  
EP type number : 0413204018  
Governor  
Governor design. : RQV300...1200MW132  
: -7  
Governor no. : 0420083312  
Cust. part No. : 0250748302

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM364LA  
Power KW : 77.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1680750089  
Outside diameter : 8.0

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x inside diameter : 3.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 4.55  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 21.00  
Firing order : 1- 3- 4- 2  
Phasing : 0-90-180-270  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

---

## BASIC SETTING

Rated speed rpm : 1200  
Rack travel in mm : 11.50  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 0.92  
 Tolerance mm : ± 0.25

Rated speed rpm : 1255  
 guide sleeve  
 travel mm : 7.93  
 Tolerance mm : ± 0.25

Rated speed rpm : 671  
 guide sleeve  
 travel mm : 3.58  
 Tolerance mm : ± 0.25

Rated speed rpm : 721  
 guide sleeve  
 travel mm : 4.06  
 Tolerance mm : ± 0.25

Rated speed rpm : 970  
 guide sleeve  
 travel mm : 5.51  
 Tolerance mm : ± 0.25

Rated speed rpm : 1690  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1450

Rack travel in mm : 11.00  
 Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
 Aneroid pressure  
 hPa : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 95.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

RATED SPEED

control lever  
 position degree : 112.0  
 tolerance degree : ± 4.0

rack travel mm : 10.50  
 Rated speed rpm : 1245  
 Tolerance 1/min : ± 5

rack travel mm : 4.00  
 Rated speed rpm : 1365  
 Tolerance 1/min : ± 15

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1450

LOW IDLE

control lever  
 position degree : 70.0  
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
 rack travel mm : 4.00  
 Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 4.50

---

**TORQUE CONTROL**

Rated speed rpm : 1200  
rack travel mm : 11.50  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 11.50  
Tolerance mm : ± 0.10

---

**ANEROID/ALTITUDE  
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 11.50  
Tolerance mm : ± 0.05

**MEASUREMENT**

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.70  
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 290  
rack travel mm : 11.25  
Tolerance mm : ± 0.10

Pressure hPa : 250  
rack travel mm : 11.00  
Tolerance mm : ± 0.10

---

**START CUT-OUT**

Rated speed rpm : < 200  
Check  
speed 1/min : < 220

---

**FUEL DELIVERY CHARACTERISTICS**

Aneroid pressure  
hPa : 700  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 66.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

**BREAKAWAY**

Rack travel in mm : 10.50  
Rated speed rpm : 1245  
Tolerance 1/min : ± 5

---

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

**LOW IDLE**

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.11.94  
Test oil : ISO 4113  
Combination No. : 0403244042  
Injection pump  
Pump designation : PES4MW100/720RS1519  
: -2  
EP type number : 0413204017  
Governor  
Governor design. : RQV300...1300MW144  
Governor no. : 0420083316  
Cust. part No. : 0250745202

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM364LA  
Power KW : 103.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1688901101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1680750089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 21.00  
Firing order : 1- 3- 4- 2  
Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

---

## BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 13.90  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance	
cm <sup>3</sup> /1000S.	: 7.5
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 12.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 2.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 4.5
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 3.5
Check tolerance	
cm <sup>3</sup> /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 0.91
Tolerance mm	: ± 0.25
Rated speed rpm	: 1355
guide sleeve	
travel mm	: 7.78
Tolerance mm	: ± 0.25
Rated speed rpm	: 1140
guide sleeve	
travel mm	: 5.88
Tolerance mm	: ± 0.25
Rated speed rpm	: 629
guide sleeve	
travel mm	: 3.15
Tolerance mm	: ± 0.25
Rated speed rpm	: 679
guide sleeve	
travel mm	: 3.53
Tolerance mm	: ± 0.25
Rated speed rpm	: 800
guide sleeve	
travel mm	: 4.00
Tolerance mm	: ± 0.25
Rated speed rpm	: 1596
guide sleeve	
travel mm	: 12.00
Tolerance mm	: ± 0.25
Rated speed rpm	: 1690

guide sleeve	
travel mm	: 13.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1480
Rack travel in mm	: 13.00
Tolerance mm	: ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1300
Aneroid pressure	
hPa	: 1200
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 126.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 4.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 4.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 7.5

RATED SPEED

control lever	
position degree	: 116.0
tolerance degree	: ± 4.0
rack travel mm	: 12.90
Rated speed rpm	: 1345
Tolerance 1/min	: ± 5
rack travel mm	: 4.00
Rated speed rpm	: 1460
Tolerance 1/min	: ± 15
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1550

LOW IDLE

control lever	
position degree	: 71.0
tolerance degree	: ± 4.0



Testing:

Rated speed rpm : 300  
rack travel mm : 3.90  
Tolerance mm : + 0.10

Rated speed rpm : 200  
CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 13.90  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 13.90  
Tolerance mm : + 0.10

Rated speed rpm : 600  
rack travel mm : 13.90  
Tolerance mm : + 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1400  
rack travel mm : 13.90  
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.10  
Tolerance mm : + 0.10

Rated speed rpm : 500  
Pressure hPa : 600  
rack travel mm : 13.10  
Tolerance mm : + 0.10

Pressure hPa : 350  
rack travel mm : 11.60  
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : < 250

Check speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 124.0

Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 5.0

Speed Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure hPa : 1200  
Rated speed rpm : 600  
Del. quantity cm<sup>3</sup>/1000 strokes : 126.0

Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 5.0

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 67.0

Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 3.0

BREAKAWAY

Rack travel in mm : 12.90  
Rated speed rpm : 1345  
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 5.0

Check tolerance cm<sup>3</sup>/1000S. : + 8.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.11.94  
Test oil : ISO 4113  
  
Combination No. : 0403246040  
  
Injection pump  
Pump designation : PES6MW100/720RS1517  
: -2  
EP type number : 0413206019  
  
Governor  
Governor design. : RQV300...1300MW146  
Governor no. : 0420083318  
  
Cust. part No. : 0250745302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 177.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1419992198  
  
Inlet press. bar : 1.5  
  
Test nozzle holde  
assembly : 1688901101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
  
Test lines : 1680750089  
  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 4.55  
Tolerance mm : + 0.05  
  
test only : + 0.10  
  
Rack travel in mm : 21.00  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300  
  
Rack travel in mm : 14.40  
Tolerance mm : + 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.02  
Tolerance mm : ± 0.25

Rated speed rpm : 1354  
guide sleeve  
travel mm : 6.72  
Tolerance mm : ± 0.25

Rated speed rpm : 1090  
guide sleeve  
travel mm : 4.70  
Tolerance mm : ± 0.25

Rated speed rpm : 490  
guide sleeve  
travel mm : 2.25  
Tolerance mm : ± 0.25

Rated speed rpm : 540  
guide sleeve  
travel mm : 2.54  
Tolerance mm : ± 0.25

Rated speed rpm : 690  
guide sleeve  
travel mm : 2.97  
Tolerance mm : ± 0.25

Rated speed rpm : 1683  
guide sleeve  
travel mm : 12.00  
Tolerance mm : ± 0.25

Rated speed rpm : 1780  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1570

Rack travel in mm : 13.50  
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

RATED SPEED

control lever  
position degree : 110.0  
tolerance degree : ± 4.0

rack travel mm : 13.40  
Rated speed rpm : 1345  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1495  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1600

LOW IDLE

control lever  
position degree : 63.0

tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 4.00  
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 5.00

---

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 14.40  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 14.40  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 14.40  
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.40  
Tolerance mm : ± 0.05

Rated speed rpm : 500

Pressure hPa : 800  
rack travel mm : 13.70  
Tolerance mm : ± 0.10

Pressure hPa : 450  
rack travel mm : 11.30  
Tolerance mm : ± 0.10

---

START CUT-OUT

Rated speed rpm : < 200  
Check speed 1/min : < 220

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 46.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1345  
Tolerance 1/min : ± 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spreed

Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance

cm<sup>3</sup>/1000s. : 5.5



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.04.93  
Test oil : ISO 4113

Combination No. : 0402646969

Injection pump  
Pump designation : PE6P120A320RS7248Z  
EP type number : 0412626862

Governor  
Governor design. : RQV275...1150PA986  
Governor no. : 0421813920

Cust. part No. : 1248041

Customer-spec. information

Customer : DAF  
Motor : RS 200 L  
Power KW : 200.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. L/h : 130  
Tolerance L/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1680750089

J21

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.30  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1335

Rack travel in mm : 10.30  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 120.0  
tolerance degree : ± 4.0

rack travel mm : 10.30  
Rated speed rpm : 1185  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1290  
Tolerance 1/min : ± 15

rack travel mm : 0.70  
Tolerance mm : ± 0.70  
Rated speed rpm : 1450

---

LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : 4.70  
Tolerance mm : ± 0.10

Rated speed rpm : 175

CRT mm min. : > 6.70

---

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 340

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
rack travel mm : 11.35  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 600  
rack travel mm : 9.20



Tolerance mm :  $\pm$  0.10  
Rated speed rpm : 600  
rack travel mm : 9.70  
Tolerance mm :  $\pm$  0.10  
rack travel mm : 10.75  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Del. quantity  
cm<sup>3</sup>/1000 strokes : 117.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 10.30  
Rated speed rpm : 1185  
Tolerance 1/min :  $\pm$  5

---

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : 5.30  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.01.93  
Test oil : ISO 4113

Combination No. : 0402646984

Injection pump  
Pump designation : PE6P120A32ORS7248  
EP type number : 0412626861

Governor  
Governor design. : RQ275/1150PA987  
Governor no. : 0421801578

Cust. part No. : 1248030

---

Customer-spec. information  
Customer : DAF  
Motor : RS 222 L  
Power KW : 222.0

---

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : +- 0.1

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : +- 1.0

Prestroke mm : 5.25  
Tolerance mm : +- 0.05

test only : +- 0.10

Rack travel in mm : 12.50  
Tolerance mm : +- 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : +- 0.30  
Check  
tolerance °NW : +- 0.75

---

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

---

BASIC SETTING

Rated speed rpm : 1000

---

Rack travel in mm : 12.25  
Tolerance mm : +- 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 187.0

<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.0
<hr/>	
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 5.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 275
<hr/>	
Rack travel in mm	: 5.40
Tolerance mm	: + 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 16.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 3.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 6.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 275
guide sleeve	
travel mm	: 1.78
Tolerance mm	: + 0.10
<hr/>	
Rated speed rpm	: 1211
guide sleeve	
travel mm	: 6.48
Tolerance mm	: + 0.10
<hr/>	
Rated speed rpm	: 1150
guide sleeve	
travel mm	: 6.00
Tolerance mm	: + 0.10
<hr/>	
Rated speed rpm	: 350
guide sleeve	
travel mm	: 4.05
Tolerance mm	: + 0.10
<hr/>	
Rated speed rpm	: 450
guide sleeve	
travel mm	: 6.00

Tolerance mm	: + 0.10
Rated speed rpm	: 1370
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 550
Rack travel in mm	: 15.80
Tolerance mm	: + 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Del. quantity	
cm <sup>3</sup> /1000 strokes	: 187.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0

RATED SPEED

control lever	
position degree	: 104.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: 11.20
Rated speed rpm	: 1208
Tolerance 1/min	: + 8
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1290
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: 0.70
Tolerance mm	: + 0.70
Rated speed rpm	: 1450

LOW IDLE

control lever	
position degree	: 74.0
tolerance degree	: + 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : 4.70  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min : ± 20

Rated speed rpm : 175  
CRT mm min. : > 7.00

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
rack travel mm : 12.25  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 600  
rack travel mm : 9.40  
Tolerance mm : ± 0.10

Rated speed rpm : 600  
rack travel mm : 10.40  
Tolerance mm : ± 0.10

rack travel mm : 11.65  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

BREAKAWAY

Rack travel in mm : 11.20  
Rated speed rpm : 1208  
Tolerance 1/min : ± 8

---

LOW IDLE

Rated speed rpm : 275  
rack travel mm : 5.40  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.06.93  
Test oil : ISO 4113

Combination No. : 0402046851

Injection pump  
Pump designation : PES6P120A320RS3290  
: -1  
EP type number : 0412026765

Governor  
Governor design. : RQ300/1050PA999-5  
Governor no. : 0421801663

Cust. part No. : CCEP 5137

Customer-spec. information

Customer : RVI  
Motor : MIHR 062045 B3  
Power KW : 152.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 155  
Tolerance l/h : + 15.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

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Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 18.00  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

---

Rack travel in mm : 12.80  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : -4.80  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.89  
Tolerance mm : + 0.10

Rated speed rpm : 1127  
guide sleeve  
travel mm : 6.36  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 469

guide sleeve  
travel mm : 4.14  
Tolerance mm : + 0.10

Rated speed rpm : 710  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1380  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1050

Rack travel in mm : 20.80  
Tolerance mm : + 0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

rack travel mm : -1.00  
Rated speed rpm : 1120  
Tolerance 1/min : + 5

rack travel mm : -8.80  
Rated speed rpm : 1250  
Tolerance 1/min : + 15

rack travel mm : -12.30  
Tolerance mm : + 0.55  
Rated speed rpm : 1350

---

LOW IDLE

Testing:

Rated speed rpm : 275  
rack travel mm : -4.80

Tolerance mm :  $\pm$  0.10  
Rated speed rpm : 200  
CRT mm max. :  $<$  -6.80

---

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 300

---

TORQUE CONTROL

Rated speed rpm : 700  
Rated speed rpm : 1050  
Tolerance mm :  $\pm$  0.10  
Rated speed rpm : 700  
rack travel mm : -4.00  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500  
rack travel mm : -0.90  
Tolerance mm :  $\pm$  0.20  
Rated speed rpm : 500  
rack travel mm : -0.30  
Tolerance mm :  $\pm$  0.10  
rack travel mm : -0.65  
Tolerance mm :  $\pm$  0.05

---

START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  195  
Check  
speed 1/min :  $<$  215

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1050

K01

Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1120  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 275  
rack travel mm : -4.80  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0





BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.10.93  
Test oil : ISO 4113

Combination No. : 0402646627

Injection pump  
Pump designation : PE6P120A320RS7297  
EP type number : 0412626884

Governor  
Governor design. : RQV350...1100PA795  
                  : -12  
Governor no. : 0421813914

Cust. part No. : 1340653

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 909

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 210  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1688901104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

K03

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
                  : 4

Phasing : 0-60-120-180-240  
          : -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.25  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 205.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

2nd speed rpm : 350

Rack travel in mm : 4.90  
 Tolerance mm : + 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 26.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1300

Rack travel in mm : 12.00  
 Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 205.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread

K04

Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

---

RATED SPEED

control lever  
 position degree : 47.0  
 tolerance degree : + 4.0

control lever  
 position degree : 106.0  
 tolerance degree : + 4.0

rack travel mm : 12.20  
 Rated speed rpm : 1145  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1270  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1400

---

LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : + 4.0

control lever  
 position degree : 15.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
 rack travel mm : 4.90  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 400  
 Tolerance 1/min : + 30

Rated speed rpm : 250  
 CRT mm min. : > 8.00

---

TORQUE CONTROL

Rated speed rpm : 1100  
 rack travel mm : 13.25

Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

MEASUREMENT

rack travel mm : 11.95  
Tolerance mm : ± 0.25

rack travel mm : 12.85  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 183.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

BREAKAWAY

Rack travel in mm : 12.20  
Rated speed rpm : 1145  
Tolerance 1/min : ± 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 25.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.90  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.10.93  
Test oil : ISO 4113

Combination No. : 0402646793

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQ300/1050PA1030-8  
Governor no. : 0421801673

Cust. part No. : 0230749502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. L/h : 110  
Tolerance L/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

K06

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.35  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.58  
Tolerance mm : + 0.10

Rated speed rpm : 1103  
guide sleeve  
travel mm : 6.37  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 394

guide sleeve  
travel mm : 4.78  
Tolerance mm : + 0.10

Rated speed rpm : 480  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1280  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 93.0  
tolerance degree : + 4.0

rack travel mm : 11.35  
Rated speed rpm : 1098  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 8.00

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.35  
Tolerance mm : ± 0.05

Rated speed rpm : 550  
rack travel mm : 12.35  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
rack travel mm : 12.35  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 400  
rack travel mm : 9.85  
Tolerance mm : ± 0.15

rack travel mm : 10.70  
Tolerance mm : ± 0.10

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 11.35  
Rated speed rpm : 1098  
Tolerance 1/min : ± 8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.10  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70

Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.10.93  
Test oil : ISO 4113  
  
Combination No. : 0402735808  
  
Injection pump  
Pump designation : PES5P120A720/3LS7250  
EP type number : 0412725809  
  
Governor  
Governor design. : RQV325...1000PA962  
: -10K  
Governor no. : 0421815363  
  
Cust. part No. : 3-7294 AE1

Customer-spec. information  
Customer : MAN  
Motor : D2865 LUH 03  
Power KW : 235.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1417413025  
  
Inlet press. bar : 1.5  
  
Overflow quantity  
min. l/h : 120  
Tolerance l/h : + 10.0  
  
Test nozzle holder  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
  
Lube oil : 1409918004

K10

Test lines : 1680750089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 4.85  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 15.50  
Tolerance mm : + 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 5

BASIC SETTING



Rated speed rpm : 900

---

Rack travel in mm : 12.45  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 261.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

2nd speed rpm : 325

Rack travel in mm : 5.40  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 3.02  
Tolerance mm : + 0.10

Rated speed rpm : 1055  
guide sleeve  
travel mm : 9.01  
Tolerance mm : + 0.10

Rated speed rpm : 800  
guide sleeve  
travel mm : 6.05  
Tolerance mm : + 0.20

Rated speed rpm : 500  
guide sleeve  
travel mm : 4.42  
Tolerance mm : + 0.20

Rated speed rpm : 1280  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1150

Rack travel in mm : 11.30  
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 261.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
position degree : 289.0  
tolerance degree : + 4.0

rack travel mm : 11.20  
Rated speed rpm : 1045  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1130  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1250

LOW IDLE

control lever  
position degree : 245.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 325  
rack travel mm : 5.40  
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 6.90

---

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 12.45  
Tolerance mm : + 0.05

Rated speed rpm : 1000  
rack travel mm : 12.20  
Tolerance mm : + 0.10

Rated speed rpm : 650  
rack travel mm : 12.20  
Tolerance mm : + 0.10

Rated speed rpm : 650  
rack travel mm : 5.50  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 900  
rack travel mm : 12.45  
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 900  
rack travel mm : 7.70  
Tolerance mm : + 0.10

Rated speed rpm : 900

rack travel mm : 11.15  
Tolerance mm : + 0.15

rack travel mm : 8.05  
Tolerance mm : + 0.05

---

START CUT-OUT

Rated speed rpm : < 280  
Check  
speed 1/min : < 300

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 247.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 273.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

BREAKAWAY

Rack travel in mm : 11.20  
Rated speed rpm : 1045  
Tolerance 1/min : + 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.30  
Tolerance mm : ± 0.25  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 325  
rack travel mm : 5.40  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.10.93  
Test oil : ISO 4113

Combination No. : 0402736825

Injection pump  
Pump designation : PES6P120A720/3LS7251  
EP type number : 0412726860

Governor  
Governor design. : RQV300...1000PA962  
: -8K  
Governor no. : 0421815303

Cust. part No. : 3-7206

---

Customer-spec. information  
Customer : MAN  
Motor : D2866LF09  
Power KW : 309.0

---

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

K14

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.85  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.50  
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

---

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

---

BASIC SETTING

Rated speed rpm : 900

---

Rack travel in mm : 13.95

Tolerance mm	: ± 0.05
<hr/>	
Del. quantity cm <sup>3</sup> /1000 strokes	: 296.0
<hr/>	
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S.	: ± 4.0
<hr/>	
Spreed Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S.	: 9.0
2nd speed rpm	: 300
Rack travel in mm	: 5.20
Tolerance mm	: ± 0.20
Del. quantity cm <sup>3</sup> /1000 strokes	: 32.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 3.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 6.0
Spreed Tolerance cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance cm <sup>3</sup> /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm	: 1130
Rack travel in mm	: 12.40
Tolerance mm	: ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 900
Del. quantity cm <sup>3</sup> /1000 strokes	: 296.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 4.0
Spreed Tolerance cm <sup>3</sup> /1000 strokes	: 5.0

Check tolerance cm <sup>3</sup> /1000S.	: 9.0
--	-------

RATED SPEED

control lever position degree	: 291.0
tolerance degree	: ± 4.0
rack travel mm	: 12.40
Rated speed rpm	: 1045
Tolerance 1/min	: ± 5
rack travel mm	: 4.00
Rated speed rpm	: 1140
Tolerance 1/min	: ± 15
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1300

LOW IDLE

control lever position degree	: 247.0
tolerance degree	: ± 4.0

Testing:

Rated speed rpm	: 300
rack travel mm	: 5.20
Tolerance mm	: ± 0.10
Rated speed rpm	: 200
CRT mm min.	: > 7.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm	: 300
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TORQUE CONTROL

Rated speed rpm	: 900
rack travel mm	: 13.95
Tolerance mm	: ± 0.05
Rated speed rpm	: 1000
rack travel mm	: 13.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 750
rack travel mm	: 13.40
Tolerance mm	: ± 0.10

Rated speed rpm : 750  
rack travel mm : 6.50  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 900  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 900  
rack travel mm : 9.10  
Tolerance mm : ± 0.10

Rated speed rpm : 900

rack travel mm : 12.00  
Tolerance mm : ± 0.20

rack travel mm : 9.45  
Tolerance mm : ± 0.05

---

START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 240  
Check  
speed 1/min : < 260

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 287.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Rated speed rpm : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

BREAKAWAY

Rack travel in mm : 12.40  
Rated speed rpm : 1045  
Tolerance 1/min : ± 5

---

STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.93  
Test oil : ISO 4113  
Combination No. : 0402646619  
Injection pump  
Pump designation : PE6P120A720RS71880  
EP type number : 0412626846  
Governor  
Governor design. : RQV200...950PA725  
                  : -11  
Governor no. : 0421814033  
Cust. part No. : 1340417

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 11 35

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1417413025  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
Tolerance l/h : ± 10.0  
Test nozzle holder  
assembly : 1688901104  
Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5  
Test Lines : 1680750008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
                  : 4  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700  
Rack travel in mm : 12.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

2nd speed rpm : 250

Rack travel in mm : 4.70  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

Rated speed rpm : 1150

Rack travel in mm : 9.50  
Tolerance mm : ± 2.50

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### RATED SPEED

control lever  
position degree : 62.0  
tolerance degree : ± 4.0

control lever  
position degree : 116.0  
tolerance degree : ± 4.0

rack travel mm : 11.70  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1110  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

#### LOW IDLE

control lever  
position degree : 64.0  
tolerance degree : ± 4.0

control lever  
position degree : 10.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min : ± 30

Rated speed rpm : 150

CRT mm min. : > 6.00

#### TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 12.75  
Tolerance mm : ± 0.05



---

ANEROID/ALTITUDE  
COMPENSATOR TEST

MEASUREMENT

rack travel mm : 11.00  
Tolerance mm : ± 0.15

rack travel mm : 12.05  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

BREAKAWAY

Rack travel in mm : 11.70  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.30  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 125.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.93  
Test oil : ISO 4113

Combination No. : 0402646620

Injection pump  
Pump designation : PE6P120A72ORS7188  
EP type number : 0412626832

Governor  
Governor design. : RQV300...900PA795  
                  : -17  
Governor no. : 0421814058

Cust. part No. : 1337550

Customer spec. information  
Customer : SCANIA  
Motor : D 11

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5  
Tolerance bar : +- 0.1

Test nozzle holde  
assembly : 1688901104

Opening pressure  
bar : 251.5  
Tolerance bar : +- 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

Check and set without ROBO diaphragam

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : +- 1.0

Prestroke mm : 4.45  
Tolerance mm : +- 0.05

test only : +- 0.10

Rack travel in mm : 10.50  
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-  
                  : 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : +- 0.30  
Check  
tolerance °NW : +- 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.35  
Tolerance mm : +- 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

2nd speed rpm : 300

Rack travel in mm : 4.80  
Tolerance mm : ± 0.30

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1280

Rack travel in mm : 12.00  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

RATED SPEED

control lever  
position degree : 47.0  
tolerance degree : ± 4.0

control lever  
position degree : 105.0

tolerance degree : ± 4.0

rack travel mm : 12.30  
Rated speed rpm : 945  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1035  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1150

---

LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : ± 4.0

control lever  
position degree : 15.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 4.80  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 345  
Tolerance 1/min : ± 30

Rated speed rpm : 200  
CRT mm min. : > 7.50

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 13.35  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

MEASUREMENT

rack travel mm : 11.00  
Tolerance mm : ± 0.15

rack travel mm : 12.05  
Tolerance mm : ± 0.05

---

### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 222.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

### BREAKAWAY

Rack travel in mm : 12.30  
Rated speed rpm : 945  
Tolerance 1/min : ± 5

---

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0

---

### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 4.80  
Tolerance mm : ± 0.30

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.93  
Test oil : ISO 4113

Combination No. : 0402646796

Injection pump  
Pump designation : PE6P120A320LS7858  
EP type number : 0412626875

Governor  
Governor design. : RQ300/1050PA1030-5  
Governor no. : 0421801665

Cust. part No. : 0230749302

Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power Kw : 200.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. L/h : 110  
Tolerance L/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

K24

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm	:	11.75
Tolerance mm	:	+ 0.05
<hr/>		
Del. quantity cm <sup>3</sup> /1000 strokes	:	190.0
<hr/>		
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	+ 4.0
<hr/>		
Spread Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	9.0
2nd speed rpm	:	300
Rack travel in mm	:	5.20
Tolerance mm	:	+ 0.30
Del. quantity cm <sup>3</sup> /1000 strokes	:	19.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 3.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 6.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance cm <sup>3</sup> /1000S.	:	10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	300
guide sleeve travel mm	:	2.59
Tolerance mm	:	+ 0.10
Rated speed rpm	:	1103
guide sleeve travel mm	:	6.38
Tolerance mm	:	+ 0.10
Rated speed rpm	:	1050
guide sleeve travel mm	:	6.00
Tolerance mm	:	+ 0.10
Rated speed rpm	:	399

guide sleeve travel mm	:	4.93
Tolerance mm	:	+ 0.10
Rated speed rpm	:	480
guide sleeve travel mm	:	6.00
Tolerance mm	:	+ 0.10
Rated speed rpm	:	1280
guide sleeve travel mm	:	11.50
Tolerance mm	:	+ 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	:	600
Rack travel in mm	:	20.00
Tolerance mm	:	+ 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1050
Del. quantity cm <sup>3</sup> /1000 strokes	:	190.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 4.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance cm <sup>3</sup> /1000S.	:	9.0

RATED SPEED

control lever position degree	:	92.0
tolerance degree	:	+ 4.0
rack travel mm	:	10.75
Rated speed rpm	:	1098
Tolerance 1/min	:	+ 8
rack travel mm	:	4.00
Rated speed rpm	:	1175
Tolerance 1/min	:	+ 15
rack travel mm	:	0.75
Tolerance mm	:	+ 0.75
Rated speed rpm	:	1300

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 8.00

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 11.75  
Tolerance mm : ± 0.05

Rated speed rpm : 550  
rack travel mm : 11.75  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
rack travel mm : 11.75  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 400  
rack travel mm : 9.75  
Tolerance mm : ± 0.15  
rack travel mm : 10.60  
Tolerance mm : ± 0.10

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 10.75  
Rated speed rpm : 1098  
Tolerance 1/min : ± 8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.80  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20

Tolerance mm : +- 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0





# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.11.93  
Test oil : ISO 4113  
Combination No. : 0402646875  
Injection pump  
Pump designation : PE6P120A72ORS7126Z  
EP type number : 0412626830  
Governor  
Governor design. : RQ200/1000PA745-1  
Governor no. : 0421801472  
Cust. part No. : 1116164

---

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 11 08

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1417413025  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1688901019  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1680750015  
Outside diameter : 6.0  
x inside diameter : 1.5  
x length mm : 600

K28

---

## REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 5.05  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

---

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

---

## BASIC SETTING

Rated speed rpm : 700  
Rack travel in mm : 12.85  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.0

---

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 225

Rack travel in mm : 4.80  
 Tolerance mm : +- 0.30

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 16.50  
 Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 205.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

L01

control lever  
 position degree : 44.0  
 tolerance degree : +- 4.0

control lever  
 position degree : 99.0  
 tolerance degree : +- 4.0

rack travel mm : 11.80  
 Rated speed rpm : 1045  
 Tolerance 1/min : +- 5

rack travel mm : 4.00  
 Rated speed rpm : 1195  
 Tolerance 1/min : +- 15

rack travel mm : 0.50  
 Tolerance mm : +- 0.50  
 Rated speed rpm : 1300

LOW IDLE

control lever  
 position degree : 62.0  
 tolerance degree : +- 4.0

control lever  
 position degree : 8.0  
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 225  
 rack travel mm : 4.80  
 Tolerance mm : +- 0.10

rack travel mm : 2.00  
 Rated speed rpm : 330  
 Tolerance 1/min : +- 20

Rated speed rpm : 125  
 CRT mm min. : > 5.80

TORQUE CONTROL

Rated speed rpm : 1000  
 rack travel mm : 12.85  
 Tolerance mm : +- 0.05

ANEROID/ALTITUDE  
 COMPENSATOR TEST

MEASUREMENT

rack travel mm : 11.30  
Tolerance mm : + 0.10

rack travel mm : 12.25  
Tolerance mm : + 0.05

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

BREAKAWAY

Rack travel in mm : 11.80  
Rated speed rpm : 1045  
Tolerance 1/min : + 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.50  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

LOW IDLE

Rated speed rpm : 225  
rack travel mm : 4.80  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.11.93  
Test oil : ISO 4113  
Combination No. : 0402646937  
Injection pump  
Pump designation : PE6P120A720RS71880  
EP type number : 0412626846  
Governor  
Governor design. : RQV200...950PA725-7  
Governor no. : 0421813803

Cust. part No. : 1333121

---

Customer-spec. information  
Customer : SCANIA  
Motor : DSC11 21

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1417413025  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1688901104  
Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5  
Test lines : 1680750008  
Outside diameter : 6.0  
x inside diameter : 2.0

L03

x Length mm : 600

---

## REMARKS

Check and set without ROBO diaphragm

---

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

---

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

---

## BASIC SETTING

Rated speed rpm : 700  
Rack travel in mm : 12.75  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

2nd speed rpm : 250

Rack travel in mm : 4.70  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1150

Rack travel in mm : 9.50  
Tolerance mm : + 2.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

RATED SPEED

LO4

control lever  
position degree : 112.0  
tolerance degree : + 4.0

control lever  
position degree : 60.0  
tolerance degree : + 4.0

rack travel mm : 11.70  
Rated speed rpm : 995  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1120  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 10.0  
tolerance degree : + 4.0

control lever  
position degree : 62.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min : + 30

Rated speed rpm : 150

CRT mm min. : > 6.00

---

TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 12.75  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

MEASUREMENT

rack travel mm : 11.00  
Tolerance mm : ± 0.15  
  
rack travel mm : 12.05  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

BREAKAWAY

Rack travel in mm : 11.70  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.50  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.93  
Test oil : ISO 4113  
Combination No. : 0402648932B  
Injection pump  
Pump designation : PE8P120A320LS7849  
EP type number : 0412628864  
Governor  
Governor design. : RQV300...1050PA1034  
Governor no. : 0421813993  
Cust. part No. : 9274608

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 9308 TI  
Power KW : 360.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0  
Overflow valve : 1417413025  
Inlet press. bar : 1.5  
Tolerance bar : +- 0.1  
Test nozzle holde  
assembly : 1688901105  
Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5  
Test lines : 1680750075  
Outside diameter : 8.0

L06

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : +- 1.0  
Prestroke mm : 4.55  
Tolerance mm : +- 0.05  
test only : +- 0.10  
Rack travel in mm : 10.50  
Tolerance mm : +- 1.50  
Firing order : 1- 8- 7- 2- 6  
                  : - 3- 5- 4  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : +- 0.30  
Check  
tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 900  
Rack travel in mm : 14.55  
Tolerance mm : +- 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 264.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 2nd speed rpm : 400  
 Rack travel in mm : 5.80  
 Tolerance mm : + 0.20  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 24.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.94  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1118  
 guide sleeve  
 travel mm : 10.51  
 Tolerance mm : + 0.25  
 Rated speed rpm : 783  
 guide sleeve  
 travel mm : 6.60  
 Tolerance mm : + 0.25  
 Rated speed rpm : 356  
 guide sleeve  
 travel mm : 1.95  
 Tolerance mm : + 0.25  
 Rated speed rpm : 406  
 guide sleeve  
 travel mm : 2.67  
 Tolerance mm : + 0.25  
 Rated speed rpm : 490  
 guide sleeve  
 travel mm : 3.59  
 Tolerance mm : + 0.25  
 Rated speed rpm : 1320

guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1140  
 Rack travel in mm : 13.50  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 264.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 107.0  
 tolerance degree : + 4.0  
 rack travel mm : 13.50  
 Rated speed rpm : 945  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1085  
 Tolerance 1/min : + 15  
 rack travel mm : 0.70  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1300

LOW IDLE

control lever  
 position degree : 81.0  
 tolerance degree : + 4.0

Testing:

rack travel mm : 2.00  
 Rated speed rpm : 460



Tolerance 1/min : +- 30  
Rated speed rpm : 300  
CRT mm min. : > 8.50

---

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 385

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 14.55  
Tolerance mm : +- 0.05

Rated speed rpm : 500  
rack travel mm : 14.55  
Tolerance mm : +- 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 550  
rack travel mm : 14.55  
Tolerance mm : +- 0.05

MEASUREMENT

Rated speed rpm : 550  
rack travel mm : 12.55  
Tolerance mm : +- 0.10  
rack travel mm : 13.75  
Tolerance mm : +- 0.05

---

START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 320  
Check  
speed 1/min : < 340

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.5

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 13.50  
Rated speed rpm : 945  
Tolerance 1/min : +- 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : +- 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 14.0

---

LOW IDLE

Rated speed rpm : 400  
rack travel mm : 5.80  
Tolerance mm : +- 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.11.93  
Test oil : ISO 4113  
Combination No. : 0400464113  
Injection pump  
Pump designation : PES4A75D410/3RS1255  
EP type number : 0410474966  
Governor  
Governor design. : RSV325...1150A8C494  
                  : -4L  
Governor no. : 0420232572  
Cust. part No. :

---

Customer-spec. information  
Customer : KHD  
Motor : F4L912  
Power KW : 36.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1419992198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 0681343009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1680750014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Pull control lever in full-load direction until gauge fits over driver and web of housing cover.  
Measure fuel delivery.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Prestroke mm : 1.95  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 3- 4- 2  
Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1150  
Rack travel in mm : 10.65  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0

<hr/>	
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	2.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 4.0
2nd speed rpm	: 325
Rack travel in mm	: 5.50
Tolerance mm	: + 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 11.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 3.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.5
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 2.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 3.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1150
Aneroid pressure	
hPa	: -
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 44.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: + 0.5
Check tolerance	
cm <sup>3</sup> /1000S.	: + 2.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 2.5
Check tolerance	
cm <sup>3</sup> /1000S.	: 4.0

---

RATED SPEED

L10

control lever	
position degree	: 104.0
tolerance degree	: + 4.0
rack travel mm	: 9.60
Rated speed rpm	: 1195
Tolerance 1/min	: + 5
rack travel mm	: 4.00
Rated speed rpm	: 1235
Tolerance 1/min	: + 15
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1350

---

LOW IDLE

control lever	
position degree	: 72.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 325
rack travel mm	: 5.00

Testing:

Rated speed rpm	: 325
rack travel mm	: 5.50
Tolerance mm	: + 0.10

rack travel mm	: 2.00
Rated speed rpm	: 415
Tolerance 1/min	: + 30

---

TORQUE CONTROL

Rated speed rpm	: 500
rack travel mm	: 11.60
Tolerance mm	: + 0.10

Rated speed rpm	: 850
rack travel mm	: 11.35
Tolerance mm	: + 0.15

---

BREAKAWAY

Rack travel in mm	: 9.60
-------------------	--------

Rated speed rpm : 1195  
Tolerance 1/min : ± 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : ± 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

LOW IDLE

Rated speed rpm : 325  
rack travel mm : 5.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.12.93  
Test oil : ISO 4113

Combination No. : 0402736846

Injection pump  
Pump designation : PES6P120A120RS7298  
EP type number : 0412726899

Governor  
Governor design. : RQV400...1250PA1081K  
Governor no. : 0421815360

Cust. part No. : 3924903

Customer-spec. information

Customer : CDC  
Motor : 6BTA-A  
Power KW : 156.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2417413086

Inlet press. bar : 1.5

Overflow quantity  
min. L/h : 100  
Tolerance L/h : + 10.0

Test nozzle holder  
assembly : 1688901103

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Prestroke mm : 3.60  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 11.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1  
S.o.d. blocking  
Barrel no. : 1  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.85  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

RATED SPEED

control lever  
position degree : 118.0  
tolerance degree : ± 6.0

rack travel mm : 12.80  
Rated speed rpm : 1330  
Tolerance 1/min : ± 15

rack travel mm : 4.00  
Rated speed rpm : 1485  
Tolerance 1/min : ± 5

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1550

LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 6.0

Testing:

Rated speed rpm : 400  
rack travel mm : 6.20  
Tolerance mm : ± 0.20

Rated speed rpm : 300  
CRT mm min. : > 8.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 13.85  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 12.20  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 11.35  
Tolerance mm : ± 0.20

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250  
rack travel mm : 13.85  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 1250  
rack travel mm : 9.70  
Tolerance mm : ± 0.20

Rated speed rpm : 1250

rack travel mm : 12.80  
Tolerance mm : ± 0.20

rack travel mm : 10.85  
Tolerance mm : ± 0.05

---

START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 290  
Check  
speed 1/min : < 300

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0  
  
Rated speed rpm : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 91.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

BREAKAWAY

Rack travel in mm : 12.80  
Rated speed rpm : 1330  
Tolerance 1/min : ± 15

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.01.94  
Test oil : ISO 4113  
Combination No. : 0402646938  
Injection pump  
Pump designation : PE6P120A72ORS71880  
EP type number : 0412626846

Governor  
Governor design. : RQ200/950PA745-3  
Governor no. : 0421801579

Cust. part No. : 1334027

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 11 21

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1688901104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

L15

x length mm : 600

REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0



Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.0

---

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

2nd speed rpm : 250

Rack travel in mm : 4.70  
 Tolerance mm : +- 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 6.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 16.50  
 Tolerance mm : +- 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 220.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

---

RATED SPEED

control lever  
 position degree : 44.0  
 tolerance degree : +- 4.0

control lever  
 position degree : 99.0  
 tolerance degree : +- 4.0

rack travel mm : 11.70  
 Rated speed rpm : 995  
 Tolerance 1/min : +- 5

rack travel mm : 4.00  
 Rated speed rpm : 1125  
 Tolerance 1/min : +- 15

rack travel mm : 0.50  
 Tolerance mm : +- 0.50  
 Rated speed rpm : 1250

---

LOW IDLE

control lever  
 position degree : 62.0  
 tolerance degree : +- 4.0

control lever  
 position degree : 11.0  
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 250  
 rack travel mm : 4.70  
 Tolerance mm : +- 0.10

rack travel mm : 2.00  
 Rated speed rpm : 350  
 Tolerance 1/min : +- 20

Rated speed rpm : 150

CRT mm min. : > 6.00

---

TORQUE CONTROL

Rated speed rpm : 950  
 rack travel mm : 12.75  
 Tolerance mm : +- 0.05

---

ANEROID/ALTITUDE  
 COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
rack travel mm : 12.75  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500  
rack travel mm : 10.40  
Tolerance mm : ± 0.20

Rated speed rpm : 500

rack travel mm : 11.00  
Tolerance mm : ± 0.15

rack travel mm : 12.05  
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 209.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 11.70  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.94  
Test oil : ISO 4113  
Combination No. : 0402646970  
Injection pump  
Pump designation : PE6P120A320RS7248  
: -10Y  
EP type number : 0412626902  
Governor  
Governor design. : RQV275...1150PA986  
Governor no. : 0421813920  
Cust. part No. : 1248046/4

Customer spec. information  
Customer : DAF  
Motor : RS 180 L  
Power Kw : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1417413025  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Overflow quantity  
min. l/h : 130  
Tolerance l/h : + 10.0  
Test nozzle holde  
assembly : 1688901105  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1680750089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 5.25  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 10.75  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.44  
Tolerance mm : ± 0.15

Rated speed rpm : 1206  
guide sleeve  
travel mm : 8.25  
Tolerance mm : ± 0.20

Rated speed rpm : 799  
guide sleeve  
travel mm : 4.21  
Tolerance mm : ± 0.25

Rated speed rpm : 315  
guide sleeve  
travel mm : 1.98  
Tolerance mm : ± 0.25

Rated speed rpm : 365

guide sleeve  
travel mm : 2.52  
Tolerance mm : ± 0.25

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.07  
Tolerance mm : ± 0.25

Rated speed rpm : 1500  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1340

Rack travel in mm : 9.70  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 120.0  
tolerance degree : ± 4.0

rack travel mm : 9.70  
Rated speed rpm : 1182  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1280  
Tolerance 1/min : ± 15

rack travel mm : 0.70  
Tolerance mm : ± 0.70  
Rated speed rpm : 1450

---

LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : 4.70  
Tolerance mm : ± 0.10

Rated speed rpm : 175  
CRT mm min. : > 7.40

---

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 340

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 10.75  
Tolerance mm : ± 0.05

Rated speed rpm : 1150  
rack travel mm : 10.70  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
rack travel mm : 10.75  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 600  
rack travel mm : 10.35  
Tolerance mm : ± 0.05

Rated speed rpm : 600  
rack travel mm : 9.50  
Tolerance mm : ± 0.10

rack travel mm : 9.90  
Tolerance mm : ± 0.10

---

FUEL DELIVERY CHARACTERISTICS

L20

Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

BREAKAWAY

Rack travel in mm : 9.70  
Rated speed rpm : 1182  
Tolerance 1/min : ± 5

---

LOW IDLE

Rated speed rpm : 275  
rack travel mm : 5.40  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0



Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 6.40  
 Tolerance mm : + 0.20

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
 guide sleeve  
 travel mm : 1.35  
 Tolerance mm : + 0.10

Rated speed rpm : 1058  
 guide sleeve  
 travel mm : 8.05  
 Tolerance mm : + 0.10

Rated speed rpm : 676  
 guide sleeve  
 travel mm : 4.50  
 Tolerance mm : + 0.25

Rated speed rpm : 301  
 guide sleeve  
 travel mm : 1.75  
 Tolerance mm : + 0.25

Rated speed rpm : 351  
 guide sleeve  
 travel mm : 2.55  
 Tolerance mm : + 0.25

Rated speed rpm : 380  
 guide sleeve  
 travel mm : 2.65  
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1150  
 Rack travel in mm : 12.70  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 199.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 119.0  
 tolerance degree : + 4.0

rack travel mm : 12.80  
 Rated speed rpm : 1045  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1160  
 Tolerance 1/min : + 15

rack travel mm : 0.70  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1250

LOW IDLE

control lever  
 position degree : 82.0  
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 275

rack travel mm : 5.00  
Tolerance mm : + 0.10  
Rated speed rpm : 175  
CRT mm min. : > 6.50

---

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 13.85  
Tolerance mm : + 0.05  
Rated speed rpm : 1000  
rack travel mm : 13.80  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
rack travel mm : 13.85  
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 600  
rack travel mm : 13.25  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 11.60  
Tolerance mm : + 0.10

rack travel mm : 12.10  
Tolerance mm : + 0.10

---

FUEL DELIVERY CHARACTERISTICS

Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

BREAKAWAY

Rack travel in mm : 12.80  
Rated speed rpm : 1045  
Tolerance 1/min : + 5

---

LOW IDLE

Rated speed rpm : 275  
rack travel mm : 6.40  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.03.94  
Test oil : ISO 4113  
  
Combination No. : 0402736849  
  
Injection pump  
Pump designation : PES6P120A720/3LS7251  
EP type number : 0412726860  
  
Governor  
Governor design. : RQV300...1000PA962  
                  : -12K  
Governor no. : 0421815407  
  
Cust. part No. : 3-7373

---

Customer-spec. information  
Customer : MAN  
Motor : D2866LF09  
Power KW : 398.0

---

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1417413025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Test nozzle holde  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Lube oil : 1409918004  
  
Test lines : 1680750089

L24

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 4.85  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 15.50  
Tolerance mm : ± 0.50  
  
Firing order : 6- 2- 4- 1- 5-  
                  : 3  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

---

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

---

BASIC SETTING

Rated speed rpm : 900

---

Rack travel in mm : 13.95  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 294.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

2nd speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.54  
Tolerance mm : + 0.25

Rated speed rpm : 1060  
guide sleeve  
travel mm : 10.39  
Tolerance mm : + 0.25

Rated speed rpm : 769  
guide sleeve  
travel mm : 6.95  
Tolerance mm : + 0.25

Rated speed rpm : 324  
guide sleeve  
travel mm : 1.86  
Tolerance mm : + 0.25

Rated speed rpm : 374  
guide sleeve  
travel mm : 2.56  
Tolerance mm : + 0.25

Rated speed rpm : 480  
guide sleeve  
travel mm : 3.65  
Tolerance mm : + 0.25

Rated speed rpm : 1260  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1120

Rack travel in mm : 12.50  
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 294.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

RATED SPEED

control lever  
position degree : 300.0  
tolerance degree : + 4.0

rack travel mm : 12.40  
Rated speed rpm : 1045  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1140  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 252.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 6.70

---

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 330

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

Rated speed rpm : 1000  
rack travel mm : 13.50  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
rack travel mm : 13.40  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
rack travel mm : 6.50  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 900  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 900

rack travel mm : 9.10  
Tolerance mm : ± 0.10

Rated speed rpm : 900

rack travel mm : 11.90  
Tolerance mm : ± 0.20

rack travel mm : 9.45  
Tolerance mm : ± 0.05

---

START CUT-OUT

Rated speed rpm : > 100

Check  
speed 1/min : > 80

Rated speed rpm : < 240

Check  
speed 1/min : < 260

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Rated speed rpm : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 287.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Rated speed rpm : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

BREAKAWAY

Rack travel in mm : 12.40  
Rated speed rpm : 1045  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.03.94  
Test oil : ISO 4113

Combination No. : 0402648970

Injection pump  
Pump designation : PE8P120A320LS7863  
EP type number : 0412628874

Governor  
Governor design. : RQV300...950PA1108K  
Governor no. : 0421815369

Cust. part No. : 0240748402

Customer-spec. information

Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder assembly : 1688901105

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 14.80  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 282.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

2nd speed rpm : 300

Rack travel in mm : 5.70  
 Tolerance mm : + 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.52  
 Tolerance mm : + 0.15

Rated speed rpm : 1008  
 guide sleeve  
 travel mm : 9.83  
 Tolerance mm : + 0.20

Rated speed rpm : 730  
 guide sleeve  
 travel mm : 6.21  
 Tolerance mm : + 0.25

Rated speed rpm : 318

guide sleeve  
 travel mm : 1.80  
 Tolerance mm : + 0.25

Rated speed rpm : 368  
 guide sleeve  
 travel mm : 2.50  
 Tolerance mm : + 0.25

Rated speed rpm : 460  
 guide sleeve  
 travel mm : 3.34  
 Tolerance mm : + 0.25

Rated speed rpm : 1220  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1070  
 Rack travel in mm : 13.80  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 282.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 121.0  
 tolerance degree : + 4.0

rack travel mm : 13.80  
 Rated speed rpm : 995  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1095  
 Tolerance 1/min : + 15

rack travel mm : 0.75

Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1250

---

#### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $>$  7.30

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 300

---

#### TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 850  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 14.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 650  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 550  
rack travel mm : 13.95  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 400  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 850  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Rated speed rpm : 850  
rack travel mm : 7.95  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 850  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.10

rack travel mm : 8.80  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm :  $>$  100  
Check  
speed 1/min :  $>$  80  
Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 277.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 268.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0  
  
 Rated speed rpm : 400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 194.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5  
  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 133.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

---

**BREAKAWAY**

Rack travel in mm : 13.80  
 Rated speed rpm : 995  
 Tolerance 1/min : ± 5

---

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
 rack travel mm : 11.80  
 Tolerance mm : ± 0.40  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 130.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 10.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 14.0

---

**LOW IDLE**

Rated speed rpm : 300  
 rack travel mm : 5.70  
 Tolerance mm : ± 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.03.94  
Test oil : ISO 4113  
Combination No. : 0401846935  
Injection pump  
Pump designation : PE6P120A320RS3262  
EP type number : 0411826797  
Governor  
Governor design. : RQV300...1050PA232  
: -4  
Governor no. : 0421813883  
Cust. part No. : 11031101-PO3 V.3/94

Customer spec. information  
Customer : VME  
Motor : TD102 GC  
Power KW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1457413010  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Test nozzle holder  
assembly : 1688901019  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1680750075  
Outside diameter : 8.0

MD4

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 3.65  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700  
Rack travel in mm : 9.45  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1150

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 54.0  
tolerance degree : ± 4.0

control lever  
position degree : 112.0  
tolerance degree : ± 4.0

rack travel mm : 8.45  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1165

Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 84.0  
tolerance degree : ± 4.0

control lever  
position degree : 24.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.40  
Tolerance mm : ± 0.20

Rated speed rpm : 100

CRT mm min. : > 6.90

---

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 355

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 9.45  
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.20  
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 170  
rack travel mm : 0.20  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 172.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

BREAKAWAY

Rack travel in mm : 8.45  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.03.94  
Test oil : ISO 4113  
Combination No. : 0402646795  
Injection pump  
Pump designation : PE6P120A320LS7858-1  
EP type number : 0412626911  
Governor  
Governor design. : RQV300...1050PA1033  
                  : -8  
Governor no. : 0421814027  
Cust. part No. : 0230749002

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 180.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1417413025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0  
Test nozzle holder  
assembly : 1688901105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

MO7

Lube oil : 1409918004  
Test lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 5.55  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
Firing order : 6- 3- 5- 2- 4-  
                  : 1-  
Phasing : 0-60-120-180-240  
          : -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm	:	11.15
Tolerance mm	:	+ 0.05
<hr/>		
Del. quantity cm <sup>3</sup> /1000 strokes	:	171.0
<hr/>		
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	+ 4.0
<hr/>		
Speed Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
<hr/>		
Check tolerance cm <sup>3</sup> /1000S.	:	9.0
<hr/>		
2nd speed rpm	:	300
<hr/>		
Rack travel in mm	:	5.20
Tolerance mm	:	+ 0.30
Del. quantity cm <sup>3</sup> /1000 strokes	:	19.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 3.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 6.0
<hr/>		
Speed Tolerance cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance cm <sup>3</sup> /1000S.	:	10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	300
guide sleeve travel mm	:	0.72
Tolerance mm	:	+ 0.20
<hr/>		
Rated speed rpm	:	1109
guide sleeve travel mm	:	8.42
Tolerance mm	:	+ 0.15
<hr/>		
Rated speed rpm	:	1640
guide sleeve travel mm	:	24.93
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	575

guide sleeve travel mm	:	4.52
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	625
guide sleeve travel mm	:	4.97
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	840
guide sleeve travel mm	:	6.19
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	1190
guide sleeve travel mm	:	10.00
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	1290
guide sleeve travel mm	:	11.50
Tolerance mm	:	+ 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	:	1170
<hr/>		
Rack travel in mm	:	10.10
Tolerance mm	:	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1050
Del. quantity cm <sup>3</sup> /1000 strokes	:	171.0
Tolerance cm <sup>3</sup> /1000 strokes	:	+ 1.0
Check tolerance cm <sup>3</sup> /1000S.	:	+ 4.0
<hr/>		
Speed Tolerance cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance cm <sup>3</sup> /1000S.	:	9.0

RATED SPEED

control lever position degree	:	121.0
tolerance degree	:	+ 4.0
<hr/>		
rack travel mm	:	10.15
Rated speed rpm	:	1095
Tolerance 1/min	:	+ 5

rack travel mm : 4.00  
Rated speed rpm : 1160  
Tolerance 1/min : +- 15

rack travel mm : 0.75  
Tolerance mm : +- 0.75  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 83.0  
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : +- 0.10

Rated speed rpm : 200

CRT mm min. : > 8.10

---

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 11.15  
Tolerance mm : +- 0.05

Rated speed rpm : 550  
rack travel mm : 11.15  
Tolerance mm : +- 0.05

Rated speed rpm : 400  
rack travel mm : 10.55  
Tolerance mm : +- 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
rack travel mm : 11.15  
Tolerance mm : +- 0.05

MEASUREMENT

Rated speed rpm : 400

MD9

rack travel mm : 10.30  
Tolerance mm : +- 0.15

Rated speed rpm : 400

rack travel mm : 10.90  
Tolerance mm : +- 0.10

rack travel mm : 10.55  
Tolerance mm : +- 0.05

---

START CUT-OUT

Rated speed rpm : > 100

Check  
speed 1/min : > 80

Rated speed rpm : < 220

Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 162.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0

Speed  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 400  
Del. quantity

cm<sup>3</sup>/1000 strokes : 119.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5

Rated speed rpm : 500  
Del. quantity

cm<sup>3</sup>/1000 strokes : 135.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Speed  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 10.15  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.03.94  
Test oil : ISO 4113

Combination No. : 0402646797

Injection pump  
Pump designation : PE6P120A320LS7858  
EP type number : 0412626875

Governor  
Governor design. : RQ300/1050PA1030-4  
Governor no. : C421801664

Cust. part No. : 0230748902

Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. L/h : 110  
Tolerance L/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

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Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1050



Rack travel in mm : 11.15  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 171.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

2nd speed rpm : 300

---

Rack travel in mm : 5.20  
 Tolerance mm : + 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 2.48  
 Tolerance mm : + 0.10

Rated speed rpm : 1108  
 guide sleeve  
 travel mm : 6.39  
 Tolerance mm : + 0.10

Rated speed rpm : 1050  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + 0.10

Rated speed rpm : 392

guide sleeve  
 travel mm : 4.64  
 Tolerance mm : + 0.10

Rated speed rpm : 490  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + 0.10

Rated speed rpm : 1280  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 171.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 91.0  
 tolerance degree : + 4.0

rack travel mm : 10.15  
 Rated speed rpm : 1098  
 Tolerance 1/min : + 8

rack travel mm : 4.00  
 Rated speed rpm : 1175  
 Tolerance 1/min : + 15

rack travel mm : 0.75  
 Tolerance mm : + 0.75  
 Rated speed rpm : 1300

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 7.60

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 11.15  
Tolerance mm : ± 0.05

Rated speed rpm : 550  
rack travel mm : 11.15  
Tolerance mm : ± 0.05

Rated speed rpm : 400  
rack travel mm : 10.55  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
rack travel mm : 11.15  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 400  
rack travel mm : 10.30  
Tolerance mm : ± 0.15

Rated speed rpm : 400  
rack travel mm : 10.90  
Tolerance mm : ± 0.10

rack travel mm : 10.55  
Tolerance mm : ± 0.10

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 162.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 10.15  
Rated speed rpm : 1098  
Tolerance 1/min : ± 8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.10  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.06.94  
Test oil : ISO 4113

Combination No. : 0402736828

Injection pump  
Pump designation : PES6P120A720/3LS7251  
EP type number : 0412726860

Governor  
Governor design. : RGV300...1000PA960  
: -7K  
Governor no. : 0421815307

Cust. part No. : 3-7207

---

Customer-spec. information  
Customer : MAN  
Motor : D2866LF09  
Power KW : 309.0

---

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : +- 0.1

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5

Lube oil : 1409918004

Test lines : 1680750015

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Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : +- 1.0

Prestroke mm : 4.85  
Tolerance mm : +- 0.05

test only : +- 0.10

Rack travel in mm : 15.50  
Tolerance mm : +- 0.50

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
: -300  
Tolerance : +- 0.30  
Check  
tolerance °NW : +- 0.75

---

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

---

BASIC SETTING

Rated speed rpm : 900

---

Rack travel in mm : 13.95  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 296.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

2nd speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.16  
Tolerance mm : + 0.25

Rated speed rpm : 1058  
guide sleeve  
travel mm : 10.48  
Tolerance mm : + 0.25

Rated speed rpm : 749  
guide sleeve  
travel mm : 6.97  
Tolerance mm : + 0.25

Rated speed rpm : 293  
guide sleeve  
travel mm : 1.97  
Tolerance mm : + 0.25

Rated speed rpm : 343  
guide sleeve  
travel mm : 2.62  
Tolerance mm : + 0.25

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.71  
Tolerance mm : + 0.25

Rated speed rpm : 1260  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1120

Rack travel in mm : 12.50  
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 296.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

RATED SPEED

control lever  
position degree : 300.0  
tolerance degree : + 4.0

rack travel mm : 12.50  
Rated speed rpm : 1045  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1150  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 256.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 6.70

---

#### CONTINUOUS-ACTION CONTROL

Rated speed rpm : 360

---

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

Rated speed rpm : 1000  
rack travel mm : 13.50  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
rack travel mm : 13.40  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
rack travel mm : 6.50  
Tolerance mm : ± 0.10

Rated speed rpm : 400  
rack travel mm : 12.00  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 900  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

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#### MEASUREMENT

Rated speed rpm : 900  
rack travel mm : 9.10  
Tolerance mm : ± 0.10

Rated speed rpm : 900

rack travel mm : 11.95  
Tolerance mm : ± 0.15

rack travel mm : 9.45  
Tolerance mm : ± 0.05

---

#### START CUT-OUT

Rated speed rpm : > 100

Check  
speed 1/min : > 80

Rated speed rpm : < 240

Check  
speed 1/min : < 260

---

#### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 287.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 169.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### BREAKAWAY

Rack travel in mm : 12.50  
Rated speed rpm : 1045  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.06.94  
Test oil : ISO 4113  
Combination No. : 0402648926  
Injection pump  
Pump designation : PE8P120A320LS7840  
EP type number : 0412628850  
Governor  
Governor design. : RQ300/1050PA972-11  
Governor no. : 0421801739

Cust. part No. : 0220747002

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 A  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : + 0.30

Check  
tolerance °NW : + 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.60



Tolerance mm :  $\pm$  0.10

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 194.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

2nd speed rpm : 600

---

Rack travel in mm : 4.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.85  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.37  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 402  
guide sleeve  
travel mm : 3.68  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 540  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1290  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm :  $\pm$  0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 194.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

RATED SPEED

control lever  
position degree : 96.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.60  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1200  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 435  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 7.90

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.60  
Tolerance mm : ± 0.10

Rated speed rpm : 800  
rack travel mm : 12.60  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500  
rack travel mm : 0.45  
Tolerance mm : ± 0.05

Rated speed rpm : 500

rack travel mm : 1.45  
Tolerance mm : ± 0.10

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 11.60  
Rated speed rpm : 1098  
Tolerance 1/min : ± 8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 600  
rack travel mm : 4.30  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.06.94  
Test oil : ISO 4113  
  
Combination No. : 0402648929  
  
Injection pump  
Pump designation : PE8P120A320LS7847-2  
EP type number : 0412628885  
  
Governor  
Governor design. : RQV300...950PA1033  
                  : -12  
Governor no. : 0421814093  
  
Cust. part No. : 0230741402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power kW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0  
  
Overflow valve : 1417413025  
  
Inlet press. bar : 1.5  
Tolerance bar : +- 0.1  
  
Test nozzle holde  
assembly : 1688901105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5  
  
Lube oil : 1409918004  
  
Test lines : 1680750075

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Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : +- 1.0  
  
Prestroke mm : 5.55  
Tolerance mm : +- 0.05  
  
test only : +- 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : +- 0.50  
  
Firing order : 8- 7- 2- 6- 3  
              : - 5- 4- 1  
  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : +- 0.30  
Check  
tolerance °Nw : +- 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550  
  
Rack travel in mm : 14.80  
Tolerance mm : +- 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes :	239.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.0
<hr/>	
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	6.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 300
<hr/>	
Rack travel in mm :	5.70
Tolerance mm :	+ 0.30
Del. quantity	
cm <sup>3</sup> /1000 strokes :	13.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 3.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 6.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	8.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 1.49
Tolerance mm	: + 0.15
<hr/>	
Rated speed rpm	: 1009
guide sleeve	
travel mm	: 8.52
Tolerance mm	: + 0.20
<hr/>	
Rated speed rpm	: 589
guide sleeve	
travel mm	: 4.97
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 639
guide sleeve	
travel mm	: 5.51
Tolerance mm	: + 0.25

Rated speed rpm	: 790
guide sleeve	
travel mm	: 6.48
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1100
guide sleeve	
travel mm	: 10.00
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1210
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm	: 1045
<hr/>	
Rack travel in mm :	13.00
Tolerance mm	: + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 550
Del. quantity	
cm <sup>3</sup> /1000 strokes :	239.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	6.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0

---

RATED SPEED

control lever	
position degree	: 122.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: 13.00
Rated speed rpm	: 998
Tolerance 1/min	: + 8
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1095
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: 0.75
Tolerance mm	: + 0.75
Rated speed rpm	: 1350

---

LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 7.60

---

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

---

TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 14.05  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
rack travel mm : 14.10  
Tolerance mm : ± 0.10

Rated speed rpm : 875  
rack travel mm : 14.25  
Tolerance mm : ± 0.10

Rated speed rpm : 800  
rack travel mm : 14.75  
Tolerance mm : ± 0.10

Rated speed rpm : 400  
rack travel mm : 12.90  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
rack travel mm : 14.80

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Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 400  
rack travel mm : 10.60  
Tolerance mm : ± 0.20

Rated speed rpm : 400

rack travel mm : 12.90  
Tolerance mm : ± 0.10

rack travel mm : 11.90  
Tolerance mm : ± 0.15

---

START CUT-OUT

Rated speed rpm : > 100

Check  
speed 1/min : > 80

Rated speed rpm : < 220

Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 214.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 108.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min : ± 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.30  
Tolerance mm : ± 0.25  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.06.94  
Test oil : ISO 4113

Combination No. : 0402648931B

Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0412628886

Governor  
Governor design. : RQ300/950PA1032-7  
Governor no. : 0421801715

Cust. part No. : 0230741302

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

N02

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8-7-2-6-3  
                  : -5-4-1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm	:	14.80
Tolerance mm	:	+ 0.05
<hr/>		
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	239.0
<hr/>		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ 4.0
<hr/>		
Spreed		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	6.0
<hr/>		
Check tolerance		
cm <sup>3</sup> /1000S.	:	9.0
<hr/>		
2nd speed rpm	:	300
<hr/>		
Rack travel in mm	:	5.70
Tolerance mm	:	+ 0.30
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	13.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 3.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ 6.0
Spreed		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	300
guide sleeve		
travel mm	:	1.74
Tolerance mm	:	+ 0.10
<hr/>		
Rated speed rpm	:	1005
guide sleeve		
travel mm	:	6.84
Tolerance mm	:	+ 0.10
<hr/>		
Rated speed rpm	:	950
guide sleeve		
travel mm	:	6.50
Tolerance mm	:	+ 0.10
<hr/>		
Rated speed rpm	:	736

guide sleeve		
travel mm	:	6.13
Tolerance mm	:	+ 0.10
<hr/>		
Rated speed rpm	:	415
guide sleeve		
travel mm	:	3.82
Tolerance mm	:	+ 0.10
<hr/>		
Rated speed rpm	:	550
guide sleeve		
travel mm	:	6.00
Tolerance mm	:	+ 0.10
<hr/>		
Rated speed rpm	:	1160
guide sleeve		
travel mm	:	11.50
Tolerance mm	:	+ 0.50
<hr/>		
Rated speed rpm	:	833
guide sleeve		
travel mm	:	6.38
Tolerance mm	:	+ 0.10

GUIDE SLEEVE POSITION

Rated speed rpm	:	600
Rack travel in mm	:	20.00
Tolerance mm	:	+ 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	550
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	239.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	+ 1.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	+ 4.0
Spreed		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	9.0

RATED SPEED

control lever		
position degree	:	97.0
tolerance degree	:	+ 4.0
<hr/>		
rack travel mm	:	13.00
Rated speed rpm	:	998
Tolerance 1/min	:	+ 8



rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 420  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.50

---

TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 14.00  
Tolerance mm : + 0.10

Rated speed rpm : 900  
rack travel mm : 14.10  
Tolerance mm : + 0.10

Rated speed rpm : 875  
rack travel mm : 14.25  
Tolerance mm : + 0.10

Rated speed rpm : 800  
rack travel mm : 14.75  
Tolerance mm : + 0.10

Rated speed rpm : 400  
rack travel mm : 12.90  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
rack travel mm : 14.80  
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 400  
rack travel mm : 10.60  
Tolerance mm : + 0.20

Rated speed rpm : 400  
rack travel mm : 12.90  
Tolerance mm : + 0.10

rack travel mm : 11.90  
Tolerance mm : + 0.15

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 214.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 108.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min : ± 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.06.94  
Test oil : ISO 4113  
Combination No. : 0402648931C  
Injection pump  
Pump designation : PE8P120A320LS7847-2  
EP type number : 0412628885  
Governor  
Governor design. : RQ300/950PA1032-7  
Governor no. : 0421801715

Cust. part No. : 0230741302

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

NO6

Test lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

---

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

---

## BASIC SETTING

Rated speed rpm : 550

---

Rack travel in mm : 14.80  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 239.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

2nd speed rpm : 300

Rack travel in mm : 5.70  
 Tolerance mm : + 0.30

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.74  
 Tolerance mm : + 0.10

Rated speed rpm : 1005  
 guide sleeve  
 travel mm : 6.84  
 Tolerance mm : + 0.10

Rated speed rpm : 950  
 guide sleeve  
 travel mm : 6.50  
 Tolerance mm : + 0.10

Rated speed rpm : 736

guide sleeve  
 travel mm : 6.13  
 Tolerance mm : + 0.10

Rated speed rpm : 415  
 guide sleeve  
 travel mm : 3.82  
 Tolerance mm : + 0.10

Rated speed rpm : 550  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + 0.10

Rated speed rpm : 1160  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

Rated speed rpm : 833  
 guide sleeve  
 travel mm : 6.38  
 Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600  
 Rack travel in mm : 20.00  
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 239.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 97.0  
 tolerance degree : + 4.0

rack travel mm : 13.00  
 Rated speed rpm : 998  
 Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 420  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.50

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 14.00  
Tolerance mm : + 0.10

Rated speed rpm : 900  
rack travel mm : 14.10  
Tolerance mm : + 0.10

Rated speed rpm : 875  
rack travel mm : 14.25  
Tolerance mm : + 0.10

Rated speed rpm : 800  
rack travel mm : 14.75  
Tolerance mm : + 0.10

Rated speed rpm : 400  
rack travel mm : 12.90  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
rack travel mm : 14.80  
Tolerance mm : + 0.05

#### MEASUREMENT

Rated speed rpm : 400  
rack travel mm : 10.60  
Tolerance mm : + 0.20

Rated speed rpm : 400

rack travel mm : 12.90  
Tolerance mm : + 0.10

rack travel mm : 11.90  
Tolerance mm : + 0.15

---

#### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 214.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 108.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min : ± 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.06.94  
Test oil : ISO 4113

Combination No. : 0402648940

Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0412628886

Governor  
Governor design. : RQ300/950PA1032-11  
Governor no. : 0421801737

Cust. part No. : 0240740602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40

Tolerance mm :  $\pm$  0.05  


---

 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 226.0  


---

 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0  


---

 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  


---

 2nd speed rpm : 300  


---

 Rack travel in mm : 5.70  
 Tolerance mm :  $\pm$  0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.63  
 Tolerance mm :  $\pm$  0.10  


---

 Rated speed rpm : 1005  
 guide sleeve  
 travel mm : 6.69  
 Tolerance mm :  $\pm$  0.10  


---

 Rated speed rpm : 950  
 guide sleeve  
 travel mm : 6.35  
 Tolerance mm :  $\pm$  0.10  


---

 Rated speed rpm : 800  
 guide sleeve  
 travel mm : 6.09  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 415  
 guide sleeve  
 travel mm : 3.72  
 Tolerance mm :  $\pm$  0.10  


---

 Rated speed rpm : 550  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm :  $\pm$  0.10  


---

 Rated speed rpm : 1160  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm :  $\pm$  0.50  


---

 Rated speed rpm : 864  
 guide sleeve  
 travel mm : 6.26  
 Tolerance mm :  $\pm$  0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600  


---

 Rack travel in mm : 20.00  
 Tolerance mm :  $\pm$  0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 226.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 97.0  
 tolerance degree :  $\pm$  4.0  


---

 rack travel mm : 13.00  
 Rated speed rpm : 998  
 Tolerance 1/min :  $\pm$  8  


---

 rack travel mm : 4.00  
 Rated speed rpm : 1080  
 Tolerance 1/min :  $\pm$  15



rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 7.00

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.40  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 14.00  
Tolerance mm : ± 0.10

Rated speed rpm : 825  
rack travel mm : 14.40  
Tolerance mm : ± 0.05

Rated speed rpm : 400  
rack travel mm : 12.90  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
rack travel mm : 14.40  
Tolerance mm : ± 0.05

#### MEASUREMENT

Rated speed rpm : 400

N12

rack travel mm : 10.60  
Tolerance mm : ± 0.20

Rated speed rpm : 400

rack travel mm : 12.90  
Tolerance mm : ± 0.10

rack travel mm : 11.90  
Tolerance mm : ± 0.15

---

#### START CUT-OUT

Rated speed rpm : > 100

Check  
speed 1/min : > 80

Rated speed rpm : > 220

Check  
speed 1/min : > 240

---

#### FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950

Del. quantity  
cm<sup>3</sup>/1000 strokes : 214.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 400

Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Rated speed rpm : 400

Del. quantity  
cm<sup>3</sup>/1000 strokes : 108.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.06.94  
Test oil : ISO 4113  
Combination No. : 0402648940B  
Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0412628886  
Governor  
Governor design. : RQ300/950PA1032-8  
Governor no. : 0421801723

Cust. part No. : 0240740602

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1417413025  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Tolerance l/h : + 10.0  
Test nozzle holder  
assembly : 1688901105  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Lube oil : 1409918004

Test lines : 1680750075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
Prestroke mm : 5.55  
Tolerance mm : + 0.05  
test only : + 0.10  
Rack travel in mm : 20.50  
Tolerance mm : + 0.50  
Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

---

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

---

## BASIC SETTING

Rated speed rpm : 550  
Rack travel in mm : 14.40

Tolerance mm	: ± 0.05
<hr/>	
Del. quantity cm <sup>3</sup> /1000 strokes	: 226.0
<hr/>	
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S.	: ± 4.0
<hr/>	
Spread Tolerance cm <sup>3</sup> /1000 strokes	: 6.0
<hr/>	
Check tolerance cm <sup>3</sup> /1000S.	: 9.0
2nd speed rpm	: 300
Rack travel in mm	: 5.70
Tolerance mm	: ± 0.30
Del. quantity cm <sup>3</sup> /1000 strokes	: 13.0
Tolerance cm <sup>3</sup> /1000 strokes	: ± 3.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 6.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance cm <sup>3</sup> /1000S.	: 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm guide sleeve travel mm	: 300
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm guide sleeve travel mm	: 1005
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm guide sleeve travel mm	: 950
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm guide sleeve travel mm	: 800
Tolerance mm	: ± 0.10

Rated speed rpm guide sleeve travel mm	: 415
Tolerance mm	: ± 0.10

Rated speed rpm guide sleeve travel mm	: 550
Tolerance mm	: ± 0.10

Rated speed rpm guide sleeve travel mm	: 1160
Tolerance mm	: ± 0.50

Rated speed rpm guide sleeve travel mm	: 864
Tolerance mm	: ± 0.10

GUIDE SLEEVE POSITION

Rated speed rpm	: 600
Rack travel in mm	: 20.00
Tolerance mm	: ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm Del. quantity cm <sup>3</sup> /1000 strokes	: 550
Tolerance cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance cm <sup>3</sup> /1000S.	: ± 4.0
Spread Tolerance cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

RATED SPEED

control lever position degree	: 97.0
tolerance degree	: ± 4.0
<hr/>	
rack travel mm Rated speed rpm	: 13.00
Tolerance 1/min	: ± 8
<hr/>	
rack travel mm Rated speed rpm	: 4.00
Tolerance 1/min	: ± 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.00

---

TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.40  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 14.00  
Tolerance mm : + 0.10

Rated speed rpm : 825  
rack travel mm : 14.40  
Tolerance mm : + 0.05

Rated speed rpm : 400  
rack travel mm : 12.90  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
rack travel mm : 14.40  
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 400

N16

rack travel mm : 10.60  
Tolerance mm : + 0.20

Rated speed rpm : 400

rack travel mm : 12.90  
Tolerance mm : + 0.10

rack travel mm : 11.90  
Tolerance mm : + 0.15

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 214.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 108.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 998  
Tolerance 1/min : + 8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.05.94  
Test oil : ISO 4113

Combination No. : 0402646977

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQ300/1050PA1030-14  
Governor no. : 0421801731

Cust. part No. : 0230741002

Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holde  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0

Prestroke mm : 5.25  
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50  
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360

Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm	:	13.00
Tolerance mm	:	± 0.05
<hr/>		
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	231.0
<hr/>		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	± 1.0
<hr/>		
Check tolerance		
cm <sup>3</sup> /1000S.	:	± 4.0
<hr/>		
Spread		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	5.0
<hr/>		
Check tolerance		
cm <sup>3</sup> /1000S.	:	9.0
<hr/>		
2nd speed rpm	:	300
<hr/>		
Rack travel in mm	:	5.20
Tolerance mm	:	± 0.30
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	13.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	± 3.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	± 6.0
Spread		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	6.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	300
guide sleeve		
travel mm	:	1.88
Tolerance mm	:	± 0.10
<hr/>		
Rated speed rpm	:	1104
guide sleeve		
travel mm	:	6.37
Tolerance mm	:	± 0.10
<hr/>		
Rated speed rpm	:	1050
guide sleeve		
travel mm	:	6.00
Tolerance mm	:	± 0.10
<hr/>		
Rated speed rpm	:	387

guide sleeve		
travel mm	:	3.87
Tolerance mm	:	± 0.10
<hr/>		
Rated speed rpm	:	510
guide sleeve		
travel mm	:	6.00
Tolerance mm	:	± 0.10
<hr/>		
Rated speed rpm	:	1280
guide sleeve		
travel mm	:	11.50
Tolerance mm	:	± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	:	600
<hr/>		
Rack travel in mm	:	20.00
Tolerance mm	:	± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	700
Del. quantity		
cm <sup>3</sup> /1000 strokes	:	231.0
Tolerance		
cm <sup>3</sup> /1000 strokes	:	± 1.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	± 4.0
Spread		
Tolerance		
cm <sup>3</sup> /1000 strokes	:	5.0
Check tolerance		
cm <sup>3</sup> /1000S.	:	9.0

RATED SPEED

control lever		
position degree	:	97.0
tolerance degree	:	± 4.0
<hr/>		
rack travel mm	:	12.00
Rated speed rpm	:	1098
Tolerance 1/min	:	± 8
<hr/>		
rack travel mm	:	4.00
Rated speed rpm	:	1195
Tolerance 1/min	:	± 15
<hr/>		
rack travel mm	:	0.75
Tolerance mm	:	± 0.75
Rated speed rpm	:	1300

LOW IDLE



control lever  
position degree : 74.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 385  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 7.50

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.00  
Tolerance mm : ± 0.05

Rated speed rpm : 1050  
rack travel mm : 13.00  
Tolerance mm : ± 0.10

Rated speed rpm : 400  
rack travel mm : 11.55  
Tolerance mm : ± 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
rack travel mm : 13.00  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 400  
rack travel mm : 10.35  
Tolerance mm : ± 0.15

Rated speed rpm : 400

rack travel mm : 11.55  
Tolerance mm : ± 0.10

rack travel mm : 12.50  
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 228.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1098  
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.05.94  
Test oil : ISO 4113

Combination No. : 0402646979

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQ300/950PA1032-9  
Governor no. : 0421801733

Cust. part No. : 0150745602

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

N22

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

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## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

---

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

---

## BASIC SETTING

Rated speed rpm : 700

---

Rack travel in mm : 13.00  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 231.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

2nd speed rpm : 300

---

Rack travel in mm : 5.20  
 Tolerance mm : + 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 2.19  
 Tolerance mm : + 0.10

Rated speed rpm : 1004  
 guide sleeve  
 travel mm : 6.36  
 Tolerance mm : + 0.10

Rated speed rpm : 950  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + 0.10

Rated speed rpm : 414

guide sleeve  
 travel mm : 4.95  
 Tolerance mm : + 0.10

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : + 0.10

Rated speed rpm : 1170  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 231.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
 position degree : 95.0  
 tolerance degree : + 4.0

rack travel mm : 11.90  
 Rated speed rpm : 998  
 Tolerance 1/min : + 8

rack travel mm : 4.00  
 Rated speed rpm : 1085  
 Tolerance 1/min : + 15

rack travel mm : 0.75  
 Tolerance mm : + 0.75  
 Rated speed rpm : 1300

LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 7.50

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.00  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 13.00  
Tolerance mm : ± 0.05

Rated speed rpm : 400  
rack travel mm : 11.55  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
rack travel mm : 13.00  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 400  
rack travel mm : 10.35  
Tolerance mm : ± 0.15

Rated speed rpm : 400

rack travel mm : 11.55  
Tolerance mm : ± 0.10

rack travel mm : 12.50  
Tolerance mm : ± 0.10

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 229.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 11.90  
Rated speed rpm : 998  
Tolerance 1/min : ± 8

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.05.94  
Test oil : ISO 4113

Combination No. : 0402646980

Injection pump  
Pump designation : PE6P120A320LS7846  
EP type number : 0412626865

Governor  
Governor design. : RQV300...950PA1033  
Governor no. : 0421813990

Cust. part No. : 0150747502

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 230.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1688901105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Lube oil : 1409918004

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Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1-

Phasing : 0-60-120-180-240  
: -300-360  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.00  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 231.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20  
 Tolerance mm : + 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

**(B) SETTING OF INJECTION PUMP WITH GOVERNOR**

**GUIDE SLEEVE POSITION**

Rated speed rpm : 1066  
 Rack travel in mm : 11.90  
 Tolerance mm : + 1.30

**FULL LOAD DELIVERY AT FULL LOAD STOP**

Rated speed rpm : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 231.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread

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Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

**RATED SPEED**

control lever  
 position degree : 120.0  
 tolerance degree : + 4.0

rack travel mm : 12.00  
 Rated speed rpm : 995  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1080  
 Tolerance 1/min : + 15

rack travel mm : 0.75  
 Tolerance mm : + 0.75  
 Rated speed rpm : 1300

**LOW IDLE**

control lever  
 position degree : 80.0  
 tolerance degree : + 4.0

**Testing:**

Rated speed rpm : 300  
 rack travel mm : 5.20  
 Tolerance mm : + 0.10

Rated speed rpm : 200  
 CRT mm min. : > 7.50

**CONTINUOUS-ACTION CONTROL**

Rated speed rpm : 350

**TORQUE CONTROL**

Rated speed rpm : 700  
 rack travel mm : 13.00  
 Tolerance mm : + 0.05

Rated speed rpm : 950  
 rack travel mm : 13.00  
 Tolerance mm : + 0.05

Rated speed rpm : 400



rack travel mm : 11.55  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
rack travel mm : 13.00  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 400  
rack travel mm : 10.35  
Tolerance mm : ± 0.15

Rated speed rpm : 400

rack travel mm : 12.50  
Tolerance mm : ± 0.10

rack travel mm : 11.55  
Tolerance mm : ± 0.10

---

START CUT-OUT

Rated speed rpm : > 100  
Check  
speed 1/min : > 80  
Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 229.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0